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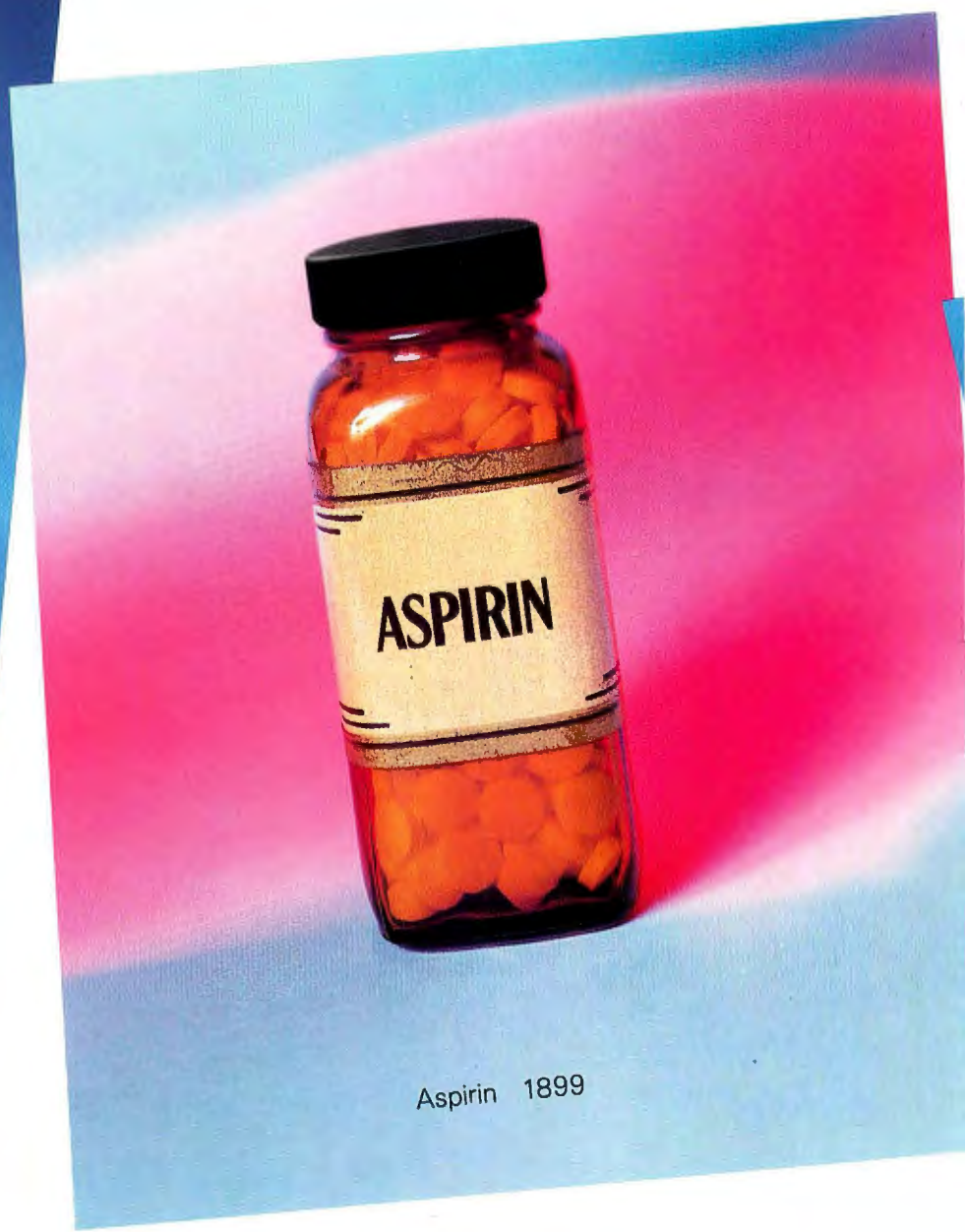

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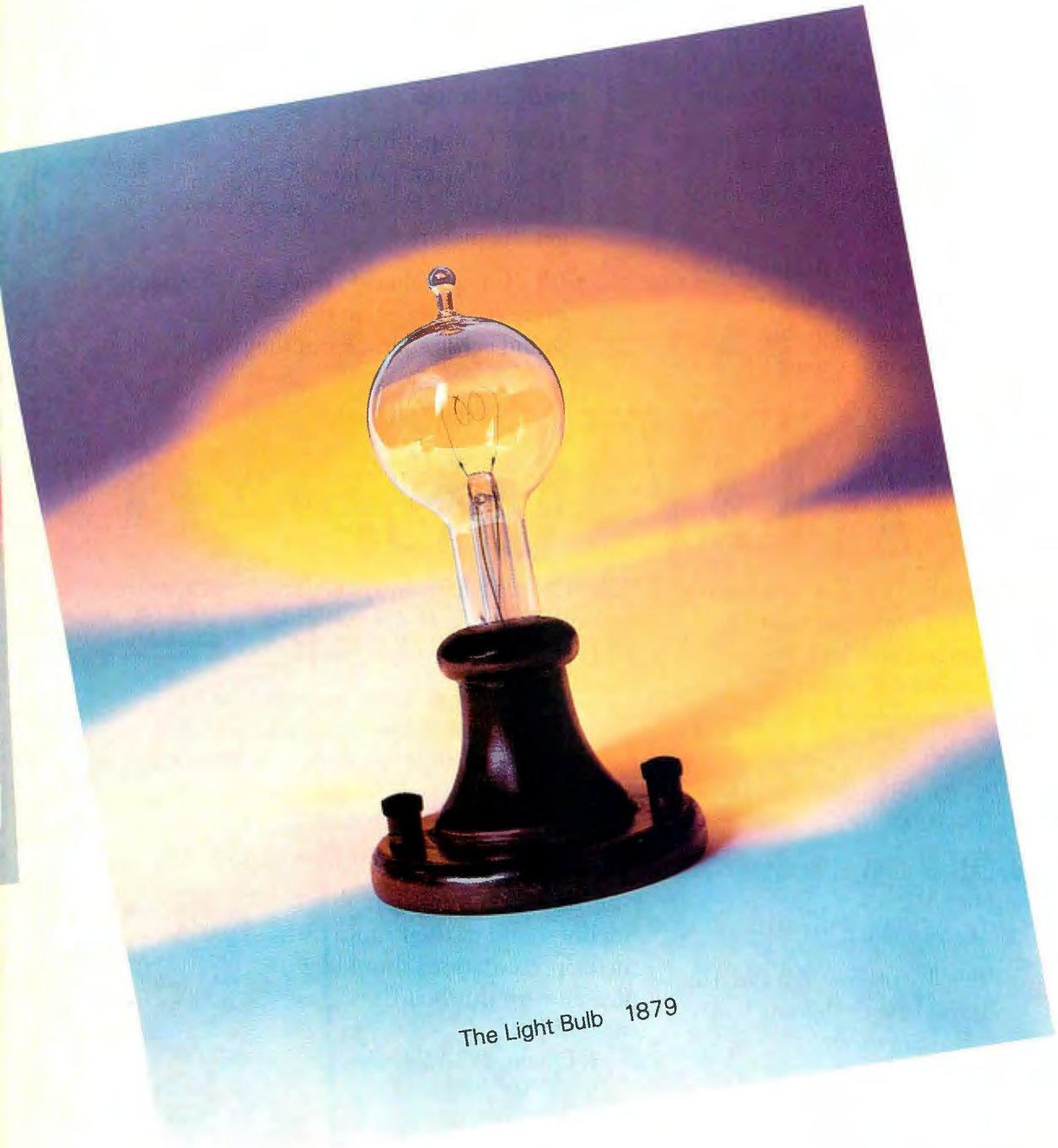

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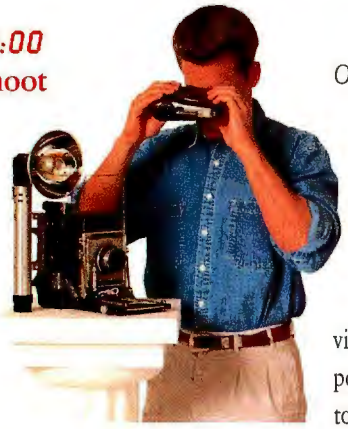
COVER: The model, photographed by David Beidny, appears in Penthouse Interactive's forthcoming CD-ROM game. The image was manipulated by Lance Jackson of LaxSyntex, International.

Painless Presentations

10:00
Shoot



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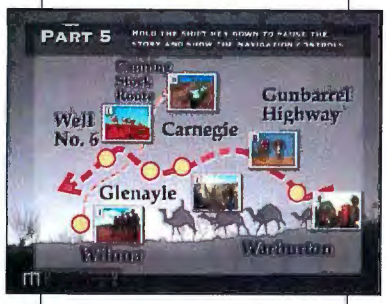

Photojournalist Rick Smolan and Magnum Design utilized Director's extensive QuickTime functionality in developing an interactive CD-ROM disc for the best-selling book, "From Alice To Ocean."

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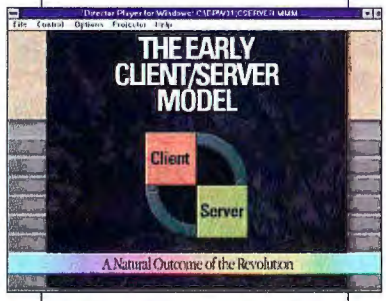

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What's Sex Got to Do With It?

By David Bunnell

There is a thin line between courage and foolishness, and in tackling the topic of sex and interactive media I admit that we may be treading dangerously along it. Historically, computer magazines (with a few notable exceptions) have avoided issue-oriented journalism and stuck to their mission of providing the information that people need to buy and use computers. In fairness to these magazines and to the people who edit them, readers haven't always shown much interest in social impact stories. And having started a few computer magazines myself, I understand perfectly well that the most successful ones do provide very useful, hard-core information that is directly related to computer needs. At *NewMedia*, we are certainly committed to this.

No one on the staff of *NewMedia* is wildly enthusiastic that interactive media, which is still very young, has become yet another vehicle to be exploited by those who would profit from pornography, sexism and violence. But neither are we surprised by it. And I realize that some people would rather not be made aware of such topics just because they subscribe to a computer magazine. Some of you may be offended, and we are sorry. However, we think that the existence of such matter and its obvious success dictate that we pay attention.

After we reviewed the CD-ROM, *Virtual Valerie*, in our November 1992 issue, we received several letters from readers expressing disappointment and, in at least one case, total outrage that we would devote space to a product many consider pornographic and sexist. I can understand why they would feel this way, but *Virtual Valerie* was—is—newsworthy. It is an unusual product with tremendous sales. And, as a journalist, I feel obligated to observe and report on multimedia in its entirety, regardless of my personal feelings or beliefs.

A few readers also wrote to protest a couple of the ads in our Showcase section for adult-oriented CD-ROM titles. Not too surprisingly, these small ads pull in as much or more response than many of the full-page and double-page ads in our magazine. Like it or not, there is a tremendous market for this stuff, and it will drive much of the sales of multimedia into the consumer market. (Note: *NewMedia* policy prohibits nudity in advertising.)

This month's cover story raises important First Amendment issues, and issues of morality, exploitation and sexism. These concerns aren't really any different than they are for film, TV or print, but the involvement of the viewer in interactive digital media could change all this. In my mind, this is the one undeniably valid reason for reporting on the seamier side of multimedia; its interactive nature gives publishers of pornography and violence the power to involve the viewer in new and unsavory ways. Pornographic video is interactive to the extent that someone can control their VCR, but this is very limited compared to what is now possible with multimedia. I believe it is conceivable that interactive pornography and violence really could have a detrimental effect on the people who observe and participate in it.

I believe it is conceivable that interactive pornography and violence really could have a detrimental effect on the people who observe and participate in it.

There is little doubt that the censorship attacks on new media will raise new challenges for publishers and civil libertarians who will now have to understand the basics of digital technology as well as constitutional law. Part of the problem is that many people are under the false impression that because it is "new" media, all the old-media guarantees don't apply. The newness of this media opens it up for attack from radicals on both ends of the political spectrum who will try to control it. This could affect the development of our industry and every reader of this magazine.

If you support the First Amendment, you have accepted the concept that forms of expression which you find offensive have a right to exist. The arguments against pornography that I find most compelling are that it exploits the people who participate in its production and, for the most part, it is sexist and degrading to women. Still, this is no justification for censorship. This is justification for better education of all people of all ages. We need to have more openness and more freedom, not less.

I expect that we will receive an unusual volume of mail as a result of the issues we raise in these pages. Many of our critics will say that these topics have no place in computer magazines. But I have never believed that computing should be isolated from the outside world. The environment that we create in, work in and live in is vital to every discipline. It is a dangerous idea that broad, controversial subjects don't belong in the pages of a specialty magazine, whatever its field of endeavor. **M**

HERE'S A PREVIEW OF THE MAY ISSUE!

Coming up in the
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and feature the latest
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Earth to *NewMedia*

My colleagues and I use your magazine to keep up on new products, information and reviews in the area of multimedia. We wonder if we should continue to do so. Your reviews usually give us information about real-world hardware and software. One would not think of a multimedia magazine as a place to get one's sensibilities shocked. It doesn't take a rocket scientist to figure out where you stand on some very important issues—morality being one of them.

The November issue of *NewMedia* certainly did not need to include the review of the *Virtual Valerie* "interactive erotica" pornographic sex CD, [Big Screen, page 42]. Do I really care if you, or anyone else, weren't offended? I was, and I subscribe to your magazine. Is pornography demeaning to women? What a laugh! Is rape? How about murder? Even a rattlesnake appears harmless, maybe even charming, until you get bit. Earth to *NewMedia*.

I appreciate good humor, such as the April Fools' Day spoof and the like that your magazine has in it from time to time, but the CD review was in very poor taste. Reviewing such tripe in a magazine of your caliber, however amazed you might be with the technical wizardry, does nothing for your image.

Marv Hodel
Morton, Illinois

Please tell your disgruntled readers that *Virtual Valerie* is just a game. I'm afraid that the volatile letters in your February issue are a symptom of a more serious problem: intolerance. The whole idea of multimedia is to open one's mind to different ways and means to accomplish an objective. This willingness to "free think" is called many things, among which are creativity, resourcefulness and diligence.

I appreciate your reviews of would-be controversial titles (like the soft bible, etc., for heaven's sake!) as much as I am interested in the more technical topics that you cover so well.

Please do not let readers who would censor your magazine influence your editorial decisions. If they abhor a certain title let them not take the time to order it, charge it or write a check.

Freedom of speech and thought are too precious to squander.

Ron Arnold
Senior Designer/Producer,
Statistica Inc.
Orlando, Florida

MULTIMEDIA FIRST

NewMedia is the first magazine I read when it gets here—even before *The Economist* or *Playboy*. By far, it is the most articulate journal in this specialized area.

Roger N. Kirkman
Kirkman Electronics
Winston-Salem, North Carolina

I love reading *NewMedia* because you always have some educational ideas. Pitfall clues are especially useful.

Multimedia will succeed in schools if it is used for educational purposes and not for glitz. Training and professional development are necessary, too.

Frada Boxer
President-elect, Illinois Computing Educators
Deerfield, Illinois

BEGINNER'S LAMENTS

As a graphic designer with more than a passing interest in computers, video, etc., I have just discovered your fascinating magazine and I am drawn to the world of multimedia. Unfortunately, my ignorance of terminology is an obstacle at this stage of my novitiate. It has occurred to me that there may be many others in similar straits. Have you thought of including a glossary of technical terms and perhaps an overview of publications designed to assist the uninitiated? I hope we will all become adepts with the assistance of *NewMedia*!

Stephen C. Smith
Concepts & Images Advertising
Durango, Colorado

THE HYPE GRIPE

I must say that I think *NewMedia* is a very good magazine. Especially, your focus on the real use of the media types with actual cases intereste me . I have recommended it to many people over here. The technology-focused hype coming from the multimedia industry is

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too overwhelming in other magazines.

Henrik Ahlen
MultiMedia AB
Stockholm, Sweden

I enjoy your magazine. It is nice to get some objective facts about products instead of just marketing hype.

Donald H. Saab
Gandalf Systems Corp.
Cherry Hill, New Jersey

I moved into the multimedia arena about six months ago, and have been overwhelmed by the volume of new—and constantly changing—technical information that I need to keep up with. *NewMedia* has cut my learning curve dramatically. I especially like the balance you maintain between product information and more general features.

Barbara Tilly
Datastream
Tryon, North Carolina

A SIMSTIM *NewMedia?*

NewMedia is still old media—you must still send it through the mails and we must still read it. Or try to read it: Small-point, florid type, black print on a blue background, printing over a picture, and overprinting (I seem to miss the meaning of "Amendment 1") do not help your legibility.

Alfred Krasner
Roslyn Heights, New York

Don't worry, Alfred, the time will come when we won't have to mail it to you—we'll just implant it.—Ed.

The Puzzler is my favorite part of the magazine every month so far, though some of the articles are quite interesting. In particular, the article on virtual reality [January 1993] was cool.

Dave Witte
Williams College
Williamstown, Massachusetts

Corrections: In "QuickTime Wars Heat Up," February 1993, we incorrectly stated that Radius' DigitalMedia Studio does not capture audio. Its audio card has full capture capability. Also in that issue, *Race to Save the Planet* ("Top Titles For Teachers") is part of the Interactive Nova series. The correct price is $395; it is distributed by Scholastic (800) 541-5513. **M**

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Copyright © ATI Technologies Inc., 1993. All company and/or product names are trademarks and/or registered trademarks of their respective manufacturers. [1]Accelerates Indeo Video, RLE and Video 1 compressed files under Video for Windows. QuickTime for Windows support is planned. Performance varies depending on system configuration. [2]ISA versions only. [3]Suggested retail prices, dealers may sell for less. Prices and features are subject to change without notice.

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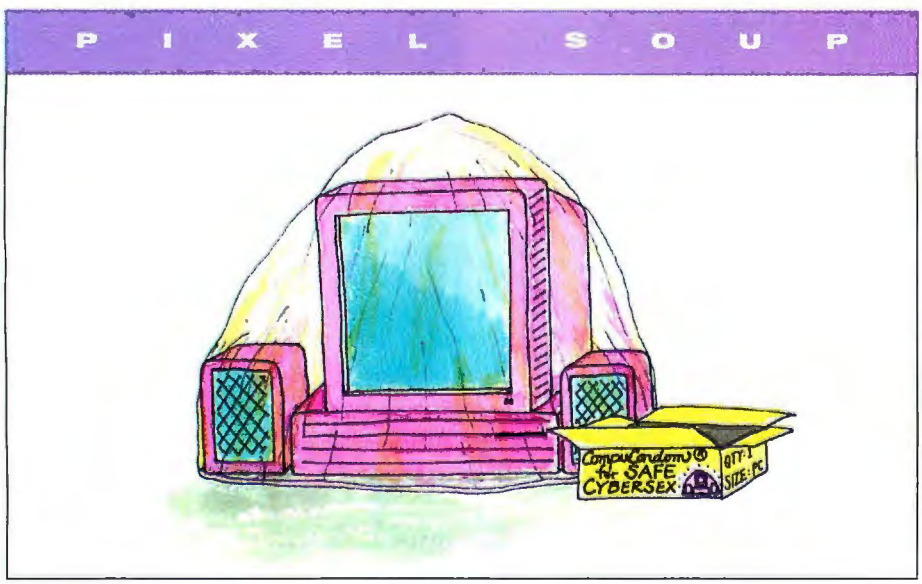
What Is the Impact of Multimedia Erotica?

KATHY KOZEL, PLANET SOFTWARE, REDONDO BEACH, CALIFORNIA:
Rather than sparking the sales of multimedia—making sales take off like it did for VCRs—I think it brings us all down. There is only a small window of opportunity for the acceptance of multimedia and quality has to be associated with this industry. The only possible negative effect of this triple-X stuff is if it becomes linked in people's minds to new media. If [X-rated titles] are just bad examples of new media—old media made into new media—it hurts all of us.

HALLE EAVELYN, HYPERBOLE STUDIOS, HOUSTON:
People are not making the delineation between things that are artistic and erotic and things that are pornographic and erotic. For instance, we would never use a dildo as a cursor. We voluntarily rated *The Madness Of Roland* because we didn't want people taking it home not knowing that it had erotic content and then being offended. When we were putting *Roland* in the stores, the gauge was whether they carry *Leisure Suit Larry*, which is a joke. *Leisure Suit Larry* is meant to be humorous and *Roland* deals with serious sexual matters. We think it's strange that we have to be lumped in with *Leisure Suit Larry* and *Virtual Valerie*. Those titles are about sex, but in *Roland* sex is secondary. Besides, there is more male nudity in *Roland* than female nudity. But something obviously pornographic like *House of Dreams* will help the sales of CD-ROM drives. Once people get the drives they'll say, "Okay, I bought this for *House of Dreams*, now let's see what else is out there." I'd like to see the CDs be more erotic and less explicit but the businessperson in me says whatever sells is fine because we've got to get CD-ROM drives into people's homes.

JOHN KOHAN-MATLICK, VIDEO-IT POST, CULVER CITY, CALIFORNIA:
I think [the multimedia industry] will have more impact on sex than the other way around. People will get their work done more quickly and have more time to fool around. We made a decision a long time ago not to work on any X-rated stuff. We edit what we choose to work on. And we don't do military, industrial or horror, either. **M**

PIXEL SOUP



TOP TEN

Top Ten Ways You Know Silicon Valley Is Becoming the New Hollywood

10) At lunch the waitress tells you she's "really a 3-D game designer" who's between gigs.
9) The VP of marketing starts calling you "babe."
8) I don't know, but let's do lunch and talk points.
7) You hear that Sharon Stone has been signed for the cover of the next release of Harvard Graphics.
6) Grauman's Chinese Theatre North opens in Milpitas. Historic circuit board *designs* are immortalized on the sidewalk.
5) Perrier starts outselling Jolt! by a two-to-one margin.
4) Hey, it's got smog, palm trees, overpriced real estate and huge egos...what's to change?
3) Adobe dubs the new Premiere upgrade *Premiere II: Frame Grabber's Revenge.*
2) Arnold Schwarzenegger buys Macromedia so that he can star in all future projects.
1) Fry's Electronics starts selling gold chains in the SIMMS department.

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MULTIMEDIA

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The False God of Content

By Chris Crawford

To hear the pundits tell it, the secret of successful multimedia is to load up on cash, arm yourself with lawyers and acquire "content." The word is uttered with hushed reverence as we imagine the new-media priesthood at Time Warner, Continuum, Paramount and the like scanning and digitizing to beat the band, looking to lay the groundwork for the next Hollywood by recycling old footage. The small-time multimedia developers might as well throw up their hands and go back to desktop publishing, right?

Wrong. Content is only part of the picture. The worship of content can, at its worst, lead to shovelware—hastily created titles with a thin veneer of interactivity. At its best, an obsession with content can lead to highly polished productions that are nonetheless impoverished due to a lack of interactivity. Unless the user takes an active part, multimedia will never be able to compete with more mature forms of communication such as television. If we aim only to be television's kid brother, we'll end up as the poor relation.

At the heart of the undue emphasis on content is what I call the expository delusion—a complex of unexamined assumptions that cloud our interactive future. According to this misconception, the multimedia computer is just a digital VCR, nothing but a switching station routing snippets of sound, video and animation to the user. Content is the commodity, and interactivity is the upholstery that we tack on to make it "computerly correct." The modus operandi here is to start with good content and then figure out some way to make it interactive.

This approach fails to recognize that the unique strength of multimedia is not so much the mixing of various digitized media as it is the computer itself. Most personal computers are used for word processing and spreadsheets. In these process-intensive applications, we don't just passively observe the data, we edit words on the page, we fiddle with budget figures—we *interact* with the data.

Victims of the expository delusion use their computers to present rather than to process. They're still caught up in the old ways of thinking. It's understandable because the only frame of reference we have is our experience with expository media.

Many developers think they've made their applications interactive by adding branching pathways and by peppering the text with hypertext links. These efforts are only the first steps toward interactivity.

To create a compelling multimedia application, think of it as a conversation rather than a lecture. In a conversation, you perform three steps: listening, thinking and speaking. Most multimedia applications are poor listeners. They talk in megabytes but offer little more than pushbuttons for responses. "Yes," "no" and "go to the next image" are usually the limit of the user's vocabulary.

Listening empowers the user with a broad set of commands. How can you listen to someone you have all but gagged? You must design a rich, expressive language that lets the user say interesting things. This is tough work; your emphasis must be on anticipating the user's interests rather than indulging your own.

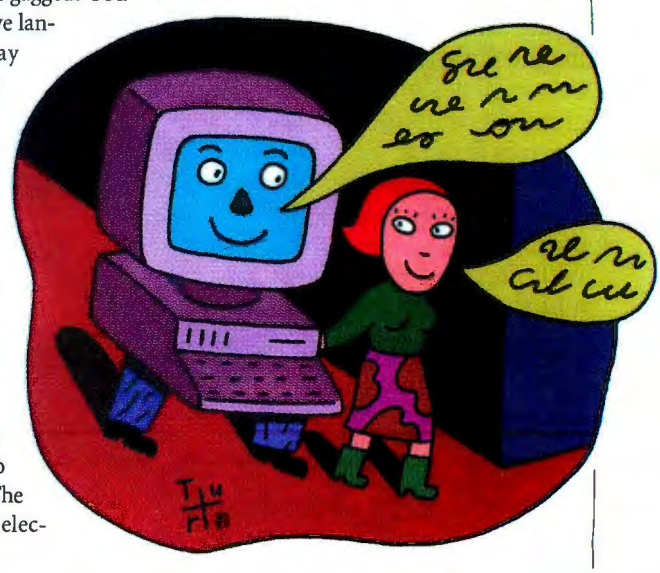
The heart of good conversation is the interplay of ideas. If you want your application to converse, it must be able to think. Most applications think no better than a vending machine; the user switches from one scene to another as if they were so many bags of potato chips. The computer is reduced to an electronic page flipper.

Images don't think; algorithms do. You must learn to program interesting algorithms into your creation if you want to be a designer of interactive products.

Suppose, for example, that you are building an application about environmental issues. Instead of the usual panoply of pictures and sounds, why not include equations showing how environmental factors affect each other and the economy? Then give the user the option to change the factors and to observe the effects of the change on society, industry and the environment. The user can then ask interesting questions ("What if I were to reduce coal burning by half?") and receive interesting answers ("Air pollution is down 27 percent but industrial production has also fallen 12 percent"). And interactivity doesn't conflict with the use of multiple media—polished video, audio and graphics can be woven into the dialog to provide sensory stimulation.

Listening and thinking are vital. Without them, multimedia is nothing more than a souped-up VCR. When we learn how to build applications that offer genuine interaction, multimedia will blossom. Not before. **M**

Chris Crawford has written 14 published computer games. He wrote The Art of Computer Game Design *and is the editor and publisher of* The Journal of Computer Game Design *in San Jose.*



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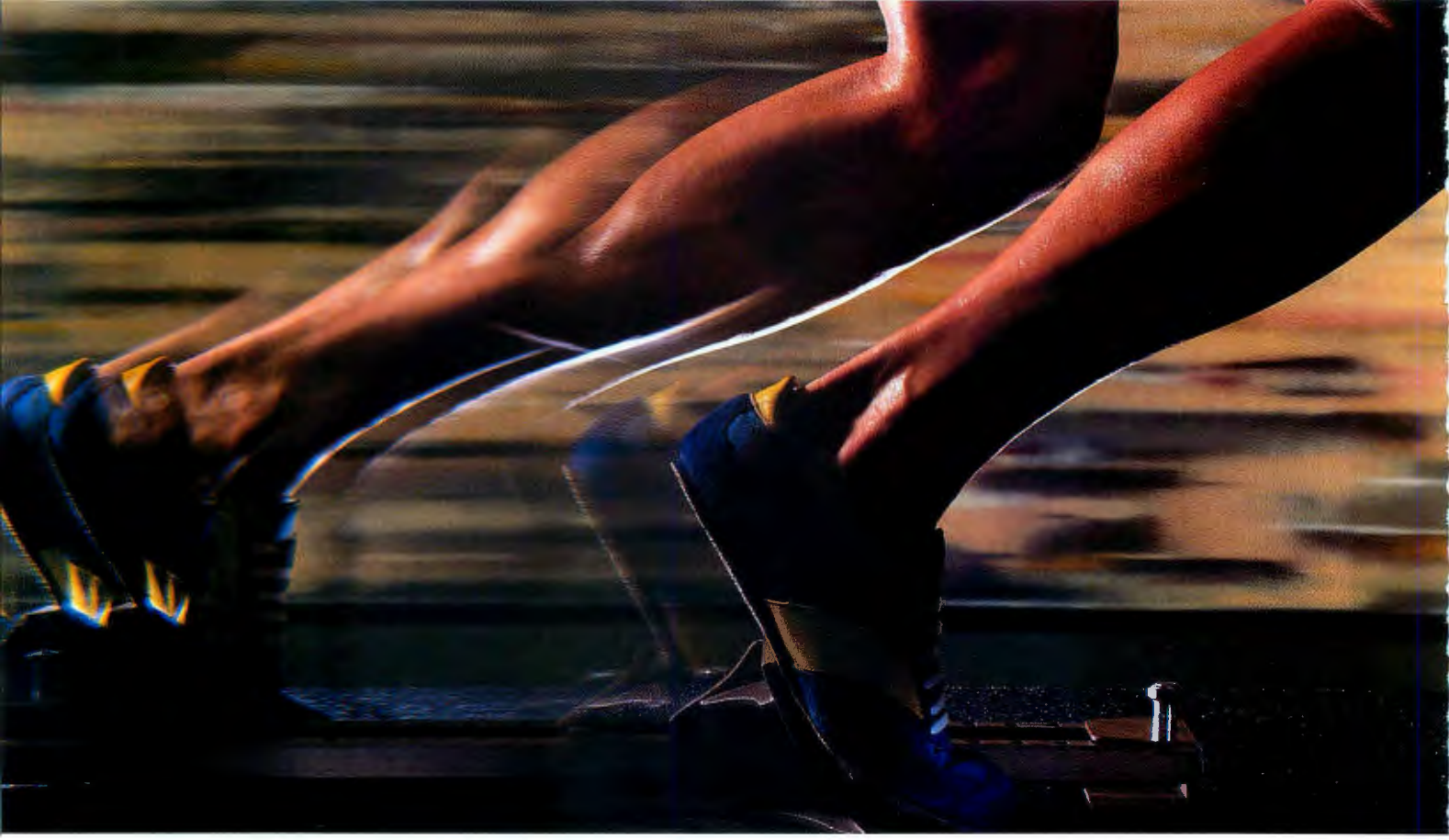

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HDTV Contenders To Merge

The envelope please. (Drum roll.) And the winner of the HDTV sweepstakes is... nobody...or maybe...everybody. Yeah, that's it.

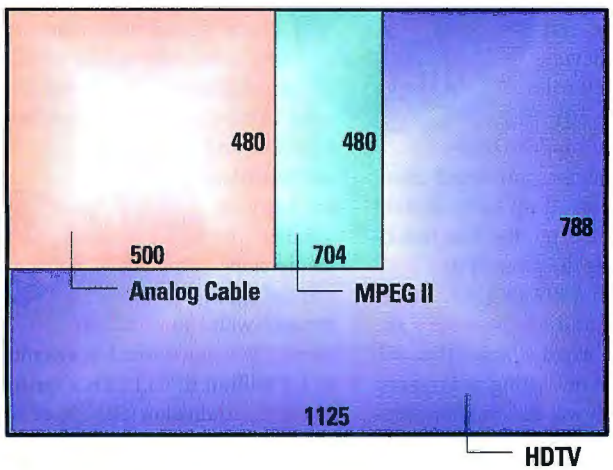
The only clear message that came from the February meetings of the Federal Communications Commission's Advisory Committee on Advanced Television Service was that analog is out and digital is definitely in. Of all the competing HDTV standards being considered in this multibillion-dollar crapshoot, the only one rejected was also the only analog system—the Japanese-sponsored Narrow Muse system from NHK. At press time, the committee was expected to announce that it would require more testing for all four of the systems vying for FCC endorsement.

Choosing a winner may be a moot point. Recently, at the urging of the FCC committee leaders, the four digital contenders have been discussing merging their systems into one. The FCC was expected to publicly call for an alliance between the contenders.

"The FCC may be working up a deal," says Tom Hargadon, editor of *The Green Sheet*. "If you put two systems together, you have a really good system. The compromise will probably include MIT and Zenith/AT&T." Hargadon says the issue should be resolved in the next six months.

The FCC found flaws in all the systems. Zenith and AT&T's system (DSC-HDTV) and the proposal from the Massachusetts Institute of Technology (CCDC) are both progressive-scan systems, whereas General Instrument's DigiCipher and the ADTV protocol from the Advanced Television Research Consortium (including NBC, Philips and Thomson) are both interlace-scan systems. The interlace systems scored better in video quality tests, but other issues were also considered. For example, ADTV had transmission problems, particularly with interference from adjacent channels, though this would only prove to be a problem over the airwaves, and the trend is definitely toward digital cable.

If the FCC can settle on a system this year, it's still possible that HDTV broadcasts could begin as early as 1995, but the high costs of the displays are not expected to drop much by then—HDTV sets will still cost thousands of dollars. Meanwhile, Regional Bell Operating Companies (RBOCs) and cable companies are scrambling to implement digital television networks, and consumers may be willing to put up with incremental improvements in much cheaper digital NTSC solutions rather than invest in HDTV.



Compared to analog broadcasting, HDTV offers better-quality transmission, higher resolution and a wider aspect ratio.

Even here, the waters are muddy. The two main compression contenders for boosting digital NTSC systems are MPEG 2, which should be be finalized by the CCITT this spring, and an NTSC version of GI/AT&T's DigiCipher, which is set to be implemented in Tele-Communications Inc.'s upcoming digital cable network. MPEG 2 has the advantage of its links to the computer world, although many broadcasters prefer DigiCipher because of its higher quality. A likely scenario is that these two technologies will merge into an interim solution. It may well start with an MPEG-like resolution (704 by 480 compared to analog cable's 500 by 480), but will stretch pixels to create a wide 16:9 ratio like that used by the 788-by-1,125-pixel HDTV.

If the current surge in sales of large-screen TVs is any indication, however, the demand for larger and higher-resolution screens will continue, so it's unlikely that the so-called super-NTSC systems will derail HDTV. They will only delay its widespread acceptance by a few years. That should be about the turn of the century, or just about the time prices of large, high-resoluton displays are expected to drop to consumer levels.

Whatever the format, it's clear that the new world of broadcasting will be digital. As industry analyst John Donovan puts it: "People watching TV will change from passive to active participants. The couch potato will become the couch commando."

—John Faulkner

TIME WARNER'S DIGITAL NETWORK TO USE ATM

The 500-channel digital cable network that Time Warner Cable plans to offer to some 4,000 of its Orlando, Florida, subscribers in early 1994 will be cobbled together from a variety of advanced technologies, including asynchronous transfer mode (ATM). The full-service network will include a high-speed fiber backbone network to the curb, coaxial cable into the home, and local decompression, intelligence and buffer storage.

ATM is a high-bandwidth digital switching technology designed to handle multiple data types. Piping digital data at up to gigabit-per-second rates, it

> ATM will enable pay-per-view video, database access, long-distance phone access, games and interactive shopping.

will enable a wide range of services such as pay-per-view video, database access, long-distance phone access, games and interactive shopping.

Late in January, Time Warner invited several hundred vendors to a meeting at its Denver office in which it requested proposals for such a system. "We merely outlined a conceptual layout of how we see the system, and asked people to come back and tell us what pieces of the net they are interested in," a spokesperson explained. Answers were expected by March, and the system is expected to be up and running by the end of the year.

—*Cliff Barney*

Clippings

More CD players, anyone? **Fujitsu** is shipping a new **CD-ROM player** version of its **FM Towns** line of multimedia computers for the Japanese market to sell for $800. **The Marty**, which plugs into a TV and comes with a hand-rest controller device, will play 250 titles available for FM Towns...**Commodore** Business Machines Inc. announced extensive price cuts of up to 45 percent across its **Amiga** product line, including dropping the price of its **CDTV Player** from $999 to $599...**Apple Computer** and **Macromedia** announced a broad alliance that will include joint marketing and training efforts. Apple will also bundle Macromedia's **Action, Soundedit Pro** and **ClipMedia** packages with CD-ROM-equipped Macintoshes...**Apple** (408/974-3983) introduced three new **Macintosh** models with CD-ROM options: the 20-MHz 68040-based Centris 610 ($2,400-$3,000), the 25-MHz 68040-based Centris 650 ($2,700-$4,000), and the 33-MHz 68040-based Quadra 800 ($4,500-$6,500)...**Compression Labs** introduced a new small group videoconferencing system called **eclipse** that sells for under $25,000. CLI also announced an expected loss of $4.5 million for 1992, and announced a strategic alliance for the development of digital TV products with **Thomson Consumer Electronics**, which is investing $14.9 million in CLI...This spring, **Intel's PCED** division (503/696-8080) will introduce a low-cost **DVI** video capture and compression board (replacing ActionMedia II) that will boost the display of **Indeo** videos. It will also introduce an option that turns the board into a desktop videoconferencing system that requires Basic Rate ISDN. Intel also announced that it would work with **Bell Atlantic** and **Ameritech** on ISDN-based videoconferencing services...**Horizons Technology** has acquired Intel's mainframe-based Digital Compression Facilities used for compressing high-end **PLV DVI** video...**Southwestern Bell** became the first phone company to purchase a cable TV system when it acquired two systems in the Washington, D.C., area (Bell Atlantic's turf) from **Hauser Communications Inc.** for $650 mil-

(continued on page 24)

CD-ROM

Capacity

The use of CD-ROM for publishing and data delivery is exploding. Last year DADC manufactured over 12 million CD-ROM discs.

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Circle 83 on Reader Service Card

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High-end multimedia applications require CD-ROMs, sound boards, video boards, compression boards, and other exciting add-in functions. With MACH and PAC there are open slots and system power to spare. And, with the unique scalability of the MACH, you can snap-on the multimedia slice and take it with you, or you can snap it off and leave it behind — take it, or leave it.

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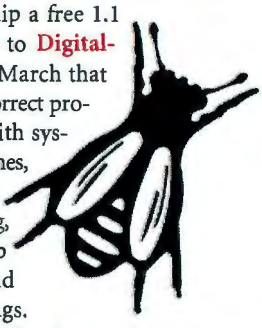
(continued from page 22)

lion....**Compton's New Media** struck a deal to rent 20 of its CD-ROM titles at **Major Video Concepts** stores...**Philips Consumer Electronics** (800/835-3506) promises to ship a portable CD-I player called the **CDI 350** in April. The $2,195 unit is nearly identical to the portable CDI 360 (which was announced last fall, but has yet to ship) except that the CDI-350's resolution is 240 by 768 instead of 480 by 768...**Media Vision** (510/770-8600) introduced a free developers kit for a new software-based audio compression technology that provides 4-to-1 compression of audio files without requiring DSP chips...**Texas Instruments** and **C-Cube Microsystems** forged an agreement to develop JPEG and MPEG compression chip technology for consumer products ranging from CD players to digital cable TV decoders ...**Hitachi, Matsushita, Sony, Toshiba** and **Victor (JVC)** are meeting to try to agree upon a common format for new digital videocassette recorders which are expected to arrive in late 1994...In early 1994 **Hewlett Packard** plans to introduce a scaled down version of its **7100 RISC** chip that will include MPEG and JPEG compression within the instruction set, enabling 30-fps video without additional hardware...More signs of consolidating multimedia on the

chip level come from **Integrated Information Technology** (408/727-1885) which will ship a new **AGX** graphics accelerator chip in the first half of this year that will include links to its Vision video display chip...This summer, **Brooktree** (619/452-7580) will ship the Bt885 **Video CacheDAC** a digital-to-analog converter chip that offloads color-space conversion tasks from the CPU to boost the size of software-compressed video...Bringing networked video to the Novell world, **Fluent** (508/651-0911) is shipping FluentLinks, a $5,995 NetWare Loadable Module (NLM)...**AimTech** (603/883-0220), publishers of IconAuthor, acquired Los Angeles-based **Tiger Media** Inc., makers of the Unix-based **Cats Meow** authoring package and two CD-ROM titles that run on Sun and Amiga platforms...**SuperMac Technologies** (408/245-2202) was set to ship a free 1.1 upgrade to **DigitalFilm** in March that would correct problems with system crashes, video stuttering, poor lip synch and other bugs. It also offered a money-back guarantee plus a free copy of **CoSA's** $1,295 **After Effects** video editing package to all Digital Film owners. **M**



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Products

ImMIX VideoCube Aims High

ImMIX took the video editing community by storm at February's Image World show in San Jose, with a preview of the Video Cube, a finish-quality, on-line nonlinear editing system that will sell for less than $40,000. This price includes storage for one hour of on-line video and two hours of CD-quality audio. Up to five extra storage modules can be added providing a maximum of six hours of on-line video. The only additional hardware necessary is a source VTR.

The VideoCube system includes a Macintosh IIvx with built-in CD-ROM drive as a front end to the system, which comes with proprietary editing software. All effects, transitions and titling are produced in real time, with no waits for rendering, at a full 60 fields per second of NTSC video. The cube-shaped heart of the system is the Media Processor, which includes the video and audio digitizing and rendering facility, as well as video storage. The Mac's CPU is only used for controlling the Media Processor, not for rendering, but the Mac also provides videographers the ability to interface with an extensive selection of graphics and animation programs. The VideoCube can import PICT, QuickTime, AIFF and Photo CD files.

ImMIX says the key to VideoCube's finish-quality results lies in an unnamed new compression technology (not JPEG, MPEG or DVI) that eliminates the blocking and temporal artifacts produced by existing compression schemes.

On the audio side, the system includes a four-channel stereo audio mixer with 16-bit processing. EQ, Gain Reverb and Pan functions can be applied on an edit-by-edit basis in real time.

A VideoCube Plus system, including a Quadra 700 and 19-inch monitors, will also be available for users who require more Macintosh processing power for secondary applications.

ImMIX, a startup founded by Grass Valley Group alumni, expects the VideoCube to appeal especially to TV stations, cable operators, ad agencies and independent producers. The system can also output edit decision lists for use in an off-line mode. The VideoCube is expected to ship in June through professional video distributors.—*Becky Waring*

ImMIX, P.O. Box 2980, Grass Valley, CA 95945; (916) 272-9800.

Reader Service No. 520

PIONEER TEAMS WITH SEGA AND NEC TO PRODUCE INTERACTIVE LASERDISC PLAYERS

In a system that merges a new interactive laserdisc standard with the ability to play popular Sega Genesis and NEC TurboGraphx CDs and cartridges, Pioneer's LaserActive home videodisc player provides multiformat gaming as well as playback of videodiscs and audio CDs.

The LaserActive system consists of a main unit (laserdisc/CD player) and three optional control packs that fit into a port on the front of the player. The Mega-LD pack and remote control pad allows consumers to play 8- and 12-inch LaserActive Mega-LD discs, Sega CDs and Genesis cartridges. The LD-ROM2 pack with remote lets users play 8- and 12-inch LaserActive LD-ROM2 discs and TurboGraphx CD-ROMs and cartridges. The third control pack provides compatibility with LaserKaraoke titles. Pioneer also hints at future compatibility with other standards, such as CD-I, giving the LaserActive player unique status as the only true multistandard entertainment playback unit around.

While the control packs provide playback of existing games and educational titles, the new LaserActive standard offers some considerable advantages to content developers. LaserActive discs can hold 60 minutes of high-quality analog sound and video in addition to 540 MB of digital data. So, for example, a Star Trek game could contain lengthy video clips from the original TV show or movies. And the clips would play back without the jerkiness and low quality associated with the CD format.

The LaserActive authoring environment consists of a personal computer, a circuit emulator, a Pioneer VDR-V1000 videodisc recorder and an interface board.

All systems will ship this summer. Prices have not been set.—*Becky Waring*

Pioneer Electronics (USA) Inc., 2265 E. 220th St., Long Beach, CA 90801; (213) 746-6337.

Reader Service No. 510

DOUBLE-SPEED CD-ROM DRIVES EMERGE AS STANDARD

Faced with an overwhelming demand for double-speed CD-ROM drives with compatibility for multisession Photo CDs, several more vendors are joining Apple, Chinon, Sony and Toshiba (see Products, *NewMedia*, January 1993) in setting a new CD-ROM performance standard.

FWB and Peripheral Land Inc. (PLI) are shipping Mac-only drives. FWB's is external, PLI's is internal for the Quadra 900/950, IIvi/vx and Performa 600. FWB's drive, the hammerCD, includes the CD-ROM Toolkit Driver, which FWB claims is up to 1,800 percent faster than other drivers since it caches to hard disk and RAM. The Driver can also be purchased separately for $79.

NEC, Philips and Procom's drives are available for the Mac, PC and PS/2 platforms in both internal and external versions. Procom's have the fastest access times. Owners of NEC InterSect drives can take advantage of an excellent trade-up program to the MultiSpin line for $179-$249. Call (800) 388-8888 for information.

Happily, two vendors are offering the fast drives in value-priced bundles with software titles. Procom's DataPack and WinPack options let buyers add up to eight titles for $129-$199. And NEC's MultiSpin 74 external drive is available in the company's Multimedia Gallery bundle, which includes speakers, a sound card and six titles.

—Becky Waring

Model	Platform	Transfer rate	Access time	Price[1]
FWB hammerCD	Mac ext	330 Kbps	200 msec.	$959
NEC MultiSpin 74	Mac, PC, PS/2 ext	300 Kbps	280 msec.	$615
NEC MultiSpin 84	Mac, PC, PS/2 int	300 Kbps	280 msec.	$550
NEC MultiSpin 38	Portable ext	300 Kbps	400 msec.	$465
Philips CM405ABX	Mac, PC, PS/2 int	300 Kbps	265 msec.	$699
Philips CM425ABX	Mac, PC, PS/2 ext	300 Kbps	265 msec.	$749
PLI CD-ROM MS	Mac int	330 Kbps	200 msec.	$843
Procom SiCD-DS	PC, PS/2 int	330 Kbps	200 msec.	$645
Procom MCD-DS	PC, PS/2 ext	330 Kbps	200 msec.	$745
Procom macCD/MX	Mac ext	330 Kbps	200 msec.	$795

[1]All PC and PS/2 drives also require SCSI interface kits that average about $150. Some Mac drives lack cables or front bezels, which must be purchased separately.

FWB Inc., 2040 Polk St., Suite 215, San Francisco, CA 94109; (415) 474-8055.
Reader Service No. 511

NEC Technologies Inc., 1255 Michael Dr., Wood Dale, IL 60191; (708) 860-9500.
Reader Service No. 512

Philips Consumer Electronics Co., One Philips Dr., Knoxville, TN 37914; (615) 521-4316.
Reader Service No. 513

Peripheral Land Inc., 47421 Bayside Pky., Fremont, CA 94538; (510) 657-2211.
Reader Service No. 514

Procom Technology Inc., 2181 Dupont Dr., Irvine, CA 92715; (714) 852-1000.
Reader Service No. 515

QUICK LOOKS

AutoCAD Release 12 ($3,750) is available for Windows 3.1. The Windows version of Sausalito, CA-based Autodesk's design-and-drafting software adds OLE, DDE, Open Database Connectivity and enhanced Clipboard support. Designers can work simultaneously on several jobs in multiple windows; redraw, pan and zoom speeds are comparable to the DOS version.
Reader Service No. 500

Hitchcock ($7,995) is a new stand-alone, non-linear, disk-based video editing system for the Mac from Digital F/X of Mountain View, CA. The NuBus board and proprietary software lets videographers edit JPEG digital video in real time and play back full-frame video (640 by 480 pixels) combined with PostScript graphics, PICS animations and digital audio. Hitchcock, planned to ship this month, outputs material to videotape from a hard disk and exports edit decision lists.
Reader Service No. 503

RasterOps' 24STV video-capture card ($999) is now shipping in a redesigned form factor for the new Apple Macintosh Centris computers. The 7-inch, single-slot card captures and displays 24-bit images from a variety of video sources, shows full-motion video in a window and provides QuickTime movie-creation capabilities.
Reader Service No. 504
—Celia Skipton

MULTIMEDIA WORKS PROVIDES UNIVERSAL WINDOWS FILE PLAYBACK

Lenel Systems International's Multimedia Works lets users view or play more than 40 types of multimedia files and embed those files in other Windows applications for universal multimedia capability. Billed as the "word processor" of multimedia, MultiMedia Works ($99) is designed to ease the transition to sound and video for both newcomers and pros.

To view a graphics file or play a QuickTime movie, users simply drag and drop the icon of the file onto the MultiMedia Works window. To integrate multimedia elements into other applications, users can choose from several methods: cut and paste, application macros, OLE, DDE and DDL. The OLE support allows automatic updating of destination files when the source changes.

MultiMedia Works also includes a slide-show utility with a simple drag-and-drop interface, synchronized audio tracks and custom backgrounds.

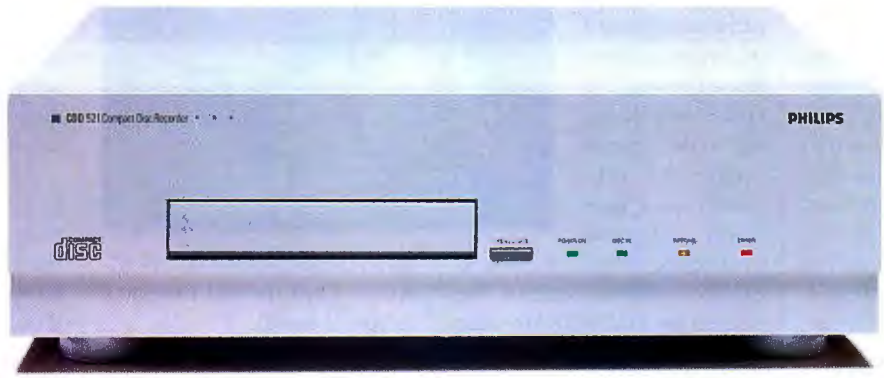
Although these features are likely to be the most widely used, MultiMedia Works also includes the unique and potent capability of controlling peripherals such as video and audio boards, CD-ROM drives, camcorders, laserdisc players and VISCA-standard devices through MCI drivers. This capability lets you control a videotape deck to find a clip cataloged using Lenel's MediaOrganizer product simply by dragging and dropping (see Test Drive, page 60). Support for audio boards is included in the base product; video device compatibility comes with a Supplementary Drivers Kit, also $99.

Lenel Systems International Inc., 19 Tobey Village Office Park, Pittsford, N.Y. 14534; (716) 248-9720.
Reader Service No. 516

THEY SAID IT COULDN'T BE DONE.

They said no one could develop an affordable CD recorder. Not under $6000.
They said no one could increase CD writing speed. Especially by 100%.
They said the next digital recorder wouldn't record on
3" compact discs. Or offer multi-volume recording.
Or self-adjust to the media being written.
They thought recording and authoring CD-ROM, CD-ROM XA
and CD-I discs would be difficult and very costly.

THEY WERE WRONG.



1992 BYTE AWARD OF EXCELLENCE

THE NEW PHILIPS CD-ROM RECORDER UNDER $6000.

From the inventors of CD technology, Philips provides the means to record and random access large databases on every CD format. The integration of a SCSI interface allows connection to all standard computer platforms.

At twice the transfer rate of previous CD recorders. And for less than $6000.

A convenient disc-loading tray eliminates the need for buying special disc caddies. You can remove a disc after a partial recording and finish the project at another sitting. And of course, the new Philips CD recorder ensures compatibility of blank, partially and fully recorded CD discs, conforming to Orange Book II industry standards.

For more information on this revolutionary CD recorder, or other Philips CD products, contact Philips Professional Interactive Media Systems at 1-800-835-3506.

PHILIPS

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Merisel	800-637-4735
Ingram Micro	800-456-8000
Tech Data	800-237-8931
Gates / FA Distributing	800-332-2222

Philips CDD521 Recorder VARs

Optical Media International	Quicktopix™ for Windows and Apple Environments	408-376-3511
CD-ROM Strategies, Inc.	CD-Gen™ fir DOS Environments	714-733-3378
Dataware Technologies	CD-Record™ Software Series for DOS abd Apple Environments	617-621-0820
Young Minds, Inc.	CD-Studio™ for UNIX Envronments	714-335-1350

Circle 81 on Reader Service Card

Real World

Have You Seen Me?

Today the faces of missing children are on milk cartons and postcards, but soon the hunt will be electronic, interactive and, it is hoped, faster.

"Time is the enemy in finding missing children," said Ernie Allen, president and co-founder of the National Center for Missing and Exploited Children in Arlington, Virginia. The chances of finding a lost child decrease with each passing minute.

In the future, Allen hopes to put every second to better use with the help of an IBM-donated network application dubbed "Have You Seen Me." The system uses IBM's Audio Visual Connection (AVC) program to connect text, audio and visual data (photos, recordings and home videos) in packets for easy modem transmission throughout a telephone network. The network will supply agencies with up-to-date, computer age-progressed "wanted posters" of missing children at the touch of a button, update multimedia kiosks in well-trafficked areas such as shopping malls and airports, and transmit home video of a child or alleged abductor to help in identification by law enforcement.

"This 21st-century tool will dramatically increase our capabilities," said Allen, a Kentucky lawyer who helped start the center in 1984. More than 20,000 children have been found with the center's help.

Yet getting the word out can be painfully slow. Creating a "wanted poster" may take up to a month, and the weekly postcard mailings can feature only one child per week. On top of this, the 550 daily calls that flood the toll-free hotline at the center's headquarters add to the 7,000 active cases handled by the center and its 43 state clearinghouses.

The multimedia network project began when James Cannavino, an IBM senior executive and a member of the center's board of directors, envisioned using the center as a "living lab" to demonstrate multimedia technology as a real-world solution. So in December 1991, IBM multimedia programming veteran Don Carlson got a call at his Mountain View, California, office asking if he could help put together a system. Carlson took existing hardware, wrapped it together using AVC and installed the system at the center in March 1992.

"My objective was to bring information to a central point for rapid dissemination," said Carlson, who mounted the system on an OS/2 platform operating system that can be created from a PS/2 with a micro channel to digitize images. The system includes a video capture adapter (Video Capture Adapter/A board) and an audio capture adapter (IBM's M-Audio Capture and Playback Adapter/A board).

Jessie Benson, instructional designer for the IBM Area Multimedia Center, is adapting Carlson's network to run in an interactive kiosk. He hopes to have a prototype kiosk at Washington, D.C.'s National Airport by mid-1993.

"Our intent is to take full-motion video and audio, put it into a kiosk with Digital Video Interactive [DVI] and ship data, via modem, directly into the kiosk to update the missing children files," said Benson. The kiosk's preliminary design will let viewers see images of missing kids and respond, either with a phone at the booth or by entering information on a simulated keyboard on the touchscreen. Benson and his staff will observe people at the kiosk and try out different ways to encourage their interaction. Once the kiosks are perfected, the center plans to make them more widely available.

The center still faces challenges in its transition into the world of multimedia, from interfacing with the non-editable hardware and software at governmental agencies to informing parents of the need to take high-quality photos and videos of their children.

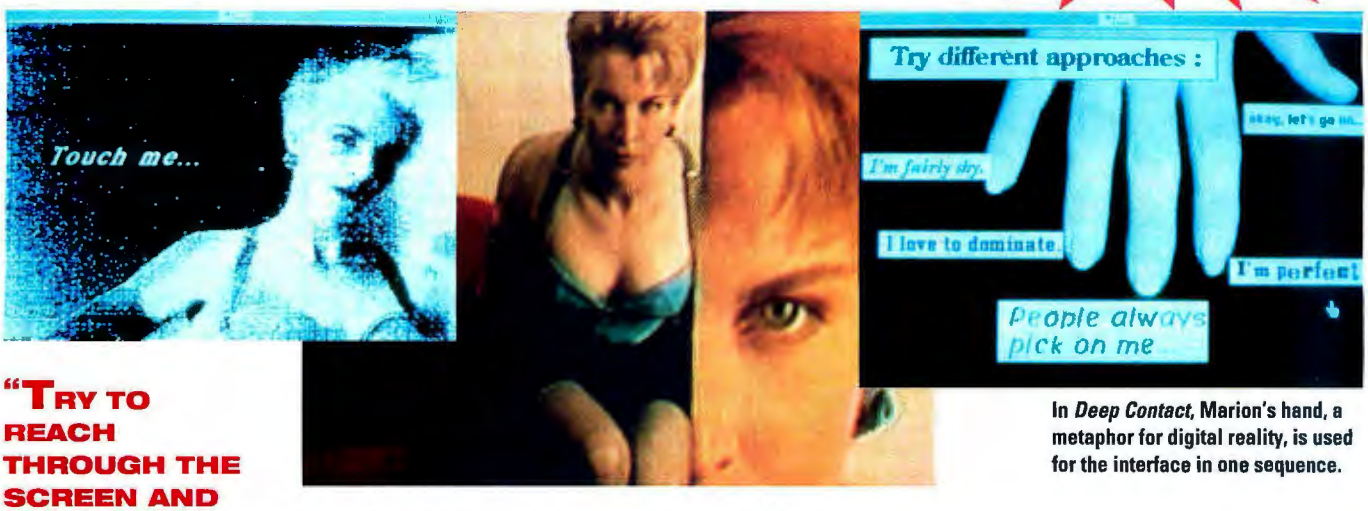
Benson said his biggest problem is keeping the center's staff, many of them retired law-enforcement officials, up to date on the latest technology and encouraging them to take their knowledge and think about ways to use multimedia to help find these children.

—Nancy Steidtmann

BUILD YOUR OWN LAMBORGHINI

Back in the '50s and '60s, the all-American boy was typically found hunched over a car model, gluing together a masterpiece that he could show off to his friends. Today's youth, however, is more likely to be engrossed in a Nintendo kickboxing game. To entice these kids back to the joys of model-building, Revell-Monogram, the Morton Grove, Illinois-based toy company, is creating a new series of model-building CD-ROMs called *Power Modeler*. Now, you can watch animations that not only show how all the pieces fit together, but let you race the models in driving and flight simulation games.

Revell plans to ship three titles by Christmas 1993. The first will be *European Racers*, which includes the Bugatti EB110, Porsche 911 Slant Nose, BMW Nazca M12 and Lamborghini LP500S.



In *Deep Contact*, Marion's hand, a metaphor for digital reality, is used for the interface in one sequence.

"TRY TO REACH THROUGH THE SCREEN AND TOUCH ME," IMPLORES A YOUNG WOMAN IN A SHORT LEATHER DRESS AS SHE TAPS ON THE GLASS OF A COMPUTER MONITOR—FROM THE INSIDE.

Deep Contact: Between Viewer and Voyeur

The above scene is from *Deep Contact: The Incomplete Sexual Fantasy Disk*, an interactive videodisc by Lynn Hershman, the San Francisco-based artist who pioneered the use of interactive video in art. With the help of Marion, the young woman who lures the viewer into her computer world, Hershman puts her own twist on the concept of the kiosk attract loop. When a viewer's interest begins to wane, Marion postures and pouts. "How long has it been since you talked to me?"

Hershman's piece, created in 1990 in an edition of three, has been exhibited in the United States and in Europe. It was first shown at the San Francisco Museum of Modern Art and is now on display at the Museum of Contemporary Art in Chicago and a museum in Düsseldorf. "I made it so people could pound on it and it wouldn't break," says the artist. The system consists of a Macintosh IIcx computer, a Pioneer LDP6000 laserdisc player, a Microtouch touchscreen monitor, a video projection screen and a surveillance camera.

"I've often felt that people were much more intimate with machines, and in particular computers, which is what *Deep Contact* is all about—about how we touch the screen to make contact with some presumed being or a reflection of ourselves that's on the other side," says Hershman.

Marion's videotape persona functions as a guide through the 57 video segments. Touching her head takes the viewer to a living room where a variety of TV channels present discussions of reproductive technologies. Touching Marion's legs transports the viewer to a garden, where Marion, a Zen master, a demon or an unknown path may be pursued. At seven points in the disc, viewers can trespass into Marion's cyberspace, suddenly seeing themselves looking out of the computer, thanks to a discreet video camera.

"This is a medium of seduction," says Hershman, whose next interactive piece is called *A Room of Her Own*. "I really wanted people to participate and be in touch, to penetrate the screen, and to reach beyond." In the process, users may end up exploring perceptions about their own sexuality.

—*Kandy Arnold*

Titles to follow are *American Muscle Cars* and *Hi-Tech Aircraft*. One kit is sold with each CD-ROM, but each disc has instructions for four models. The CD-ROM kits will be priced at $70 while the model kits alone cost about $10.

Revell hired Atlanta-based Floyd Design to create the discs. Floyd used proprietary software, along with Storyboard Live, Tempra Pro, 3D Studio and Animator Pro. They also made prototype QuickTime movies of the actual models being constructed to help the animators' accuracy.

Besides the games and 3-D animations, which can be played at different speeds and perspectives, the discs will also include digitally recorded sound effects, original music and 15-fps, quarter-screen video vignettes. There are also handy modeling tips, airbrush techniques and decal application. By using the painting option model builders can see how their car looks in different colors before painting it. The discs will run on any MPC machine and Revell said they are planning Sega, Macintosh and Amiga versions.

—*Gillian Newson*

Power Modeler **builders can see an animation of their cars being built or view it in different colors before it is painted. There are also videos of gluing and painting techniques.**

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Circle 37 on Reader Service Card

Choosing Speakers for Multimedia

By Becky Waring and Christopher Yavelow

Now that 16-bit CD-quality sound boards are the standard for multimedia productions and gaming, it's time to invest in speakers that match. Your computer's built-in speaker likely offers insufficient fidelity for anything but system beeps, and certainly won't do for a fancy presentation. A good set of speakers is particularly important during multimedia development for commercial distribution. Working on the sound of your production with the best set of speakers you can obtain will point out noise and other audio anomalies, which otherwise might go unnoticed until some aficionado who has made the appropriate investment in sound quality launches your document.

While you can plug your computer's sound output into a stereo receiver with hi-fi speakers and get great sound, we focus here on self-powered speaker systems optimized for use with audio originating from your computer, sound card, CD-ROM drive or all three. These speakers are magnetically shielded so that they don't interfere with your monitor or hard disk, and come in several configurations, from under-monitor consoles to satellite/subwoofer designs. Prices are just as wide-ranging, from $29.95 to $429. The upper reaches generally have more power output, excellent sound quality, multiple inputs and mixing controls that let you perform voiceovers and other special effects easily.

PHOTO BY SANDY FRANK

Sound Quality

The first consideration in buying any pair of speakers is naturally the quality of sound reproduction. In general, for self-amplified speakers, the higher the power output and the wider and flatter the frequency response, the better. While some powered speaker systems contain one full-range speaker cone designed to handle the entire frequency spectrum, others contain two or three drivers for each channel. While a two-way system is almost always better than a single full-range speaker, a three-way system doesn't necessarily improve upon a two-way system.

The most important specification is frequency response. This indicates the highest and lowest frequencies of sound that the speaker is physically capable of reproducing. An ideal range is often considered to be 20 Hz to 20 kHz, the range of an average human ear. To put this in perspective, consider that 20 Hz is about five notes below the lowest note of an acoustic piano. The highest note on a piano has a fundamental frequency of 4.2 kHz. If you're wondering why 4.2 kHz is so much lower than the optimal 20 kHz at the upper range of both human hearing and speaker specifications, it is because nearly all sounds consist of a spectrum of complex overtones (sometimes called partials or harmonics) generated by the vibrating string, air column or digital oscillator. These overtones allow us to differentiate between a note played on the piano and the same pitch played on the flute or violin.

Power output for these computer-speaker systems ranges from a tiny 1.5 watts per channel to a robust 35, with most in the 3- to 10-watt range. These systems can cope with small room presentations, but you'd best use a regular stereo amplifier and speakers for anything larger.

Since they are specially designed for computer use, some of these speakers include stereo-imaging or sound-processing circuits that create stereo effects from monaural sources. Such circuits can greatly enhance the output from many games and entertainment titles, but be sure your sound card does not already include such a feature before basing a buying decision on it.

Bells and Whistles

For multimedia presentations, sound quality is just half the battle. You'll also want to get a system with more than one input jack so that you can connect a microphone, VCR, MIDI instrument or audio CD player to the speakers at the same time as your computer. The systems here have up to four separate inputs.

Other useful extras are separate volume and tone controls on each speaker, mixing knobs for the various inputs, and an on/off switch. Some models lack power switches and are in standby mode continously, a situation that can wreak havoc with loud beeps in a quiet office.

Headphone jacks are another plus, and a few systems include a line-level output jack so that you can record your mixed audio directly to disk or send it to a larger stereo system. An amplifier bypass switch lets you drive the speakers from a regular stereo amp or receiver.

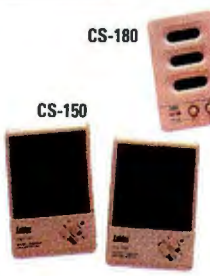
Aesthetics

Powered speakers come in a wide range of configurations and colors. Most models consist of two speakers, each with its own amplifier or with an amplifier in one that drives both speakers. A couple have separate subwoofers that may be

(continued on page 37)

POWERED SPEAKERS FOR MULTIMEDIA

Vendor	Acoustic Research				Altec Lansing		Bose	Koss		
Model	**Powered Partner 22**	**Powered Partner 42**	**Powered Partner 622**	**Powered Partner 570**	**ACS100**	**ACS200/ACS300**	**Roommate Computer Monitor**	**HD/1**	**HD/4**	**HD/6**
Reader Service	600	600	600	600	601	601	602	603	603	603
Phone	(617) 821-2300	(617) 821-2300	(617) 821-2300	(617) 821-2300	(717) 296-4434	(717) 296-4434	(508) 879-7330	(414) 964-5000	(414) 964-5000	(414) 964-5000
Frequency response	100 Hz-20 kHz	80 Hz-20 kHz	50 Hz-20 kHz	40 Hz-25 kHz	ACS100: 80 Hz-20 kHz; w/ACS150: 35 Hz-20 kHz	ACS200: 100 Hz-20 kHz; ACS300: 35 Hz-20 kHz	N/A	50 Hz-20 kHz	50 Hz-20 kHz	50 Hz-20 kHz
Power output (watts per channel)	8	8	8, 30 subwoofer	35	8; optional ACS150 subwoofer: 15	9 satellites; 15 subwoofer (ACS300 only)	N/A	3.6	3.6	3.6
Driver configuration	One-way	Two-way	One-way plus subwoofer	Two-way	Two-way, optional subwoofer	ACS200: two-way, ACS300: two-way plus subwoofer	One-way	One-way	One-way	One-way
Inputs	Stereo mini-jack	Stereo mini-jack	RCA jack w/stereo mini-adapter	RCA jack	Two stereo mini-jacks	Two stereo mini-jacks	Stereo mini-jack	Stereo mini-jack	Stereo mini-jack	Stereo mini-jack
Outputs	None	None	None	None	None	None	None	None	None	None
Volume controls	Master	Master	Master	Master	Master	Master plus Balance control	Master	Left & right	Master	Left & right
Bass/treble (tone) controls	None	Tone	Tone	Bass/treble	Treble	ACS200: Treble, ACS300: Bass/treble	None	Bass boost button	Bass/treble/ midrange	Bass boost button
Mixing controls	None	None	None	None	None	Single-knob A/B mixing	None	None	None	None
On/off switch	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
Power supply	External AC adapter	External AC adapter	Internal AC	Internal AC, optional DC/battery adapter	External AC adepter	External AC adapter	Internal AC	External AC adapter or batteries	External AC adapter or batteries	External AC adapter or batteries
Mounting brackets	Wall or monitor	Wall or monitor	Wall or monitor	Wall	Wall or monitor	Wall or monitor	Optional wall or shelf	None	None	None
Colors	Charcoal, gray	Charcoal, gray	Charcoal, gray	Charcoal, gray	Almond	Almond	Platinum	Off-white	Off-white	Off-white
Additional Features					DSP for stereo imaging, clamshell design	DSP for stereo imaging, clamshell design	Active equalization network			
Price (pair)	$109	$219	$349	$399	$180 (optional ACS150 subwoofer $150)	ACS200: $300; ACS300 (includes ACS150 subwoofer): $400	$339	$39.99	$59.99	$99.99

Labtec				MICS Computers	Monster Design Group	Recoton		Roland
 CS-150	CS-180	CS-550	SS-700	CS-900	CS-1000 MediaMatch	MacSpeaker, Persona PC	64545	64555 CS-10

CS-150	CS-180	CS-550	SS-700	CS-900	CS-1000	MediaMatch	MacSpeaker, Persona PC	64545	64555	CS-10
604	604	604	604	604	604	605	606	607	607	608
(206) 896-2000	(206) 896-2000	(206) 896-2000	(206) 896-2000	(206) 896-2000	(206) 896-2000	(310) 325-4520	(415) 871-6000	(718) 392-6442	(718) 392-6442	(213) 685-5141
50 Hz-15 kHz	50 Hz-15 kHz	40 Hz-16 kHz	40 Hz-16 kHz	40 Hz-16 kHz	40 Hz-16 kHz	75 Hz-15 kHz	70 Hz-18 kHz	100 Hz-12 kHz	50 Hz-15 kHz	N/A
3.6	2.5	4	4	6	2.5	10	10	2	2.5	3
One-way	One-way	One-way	One-way	Two-way	Two-way	One-way	Three-way	One-way	Two-way	Two-way
Stereo mini-jack	Stereo mini-jack	Stereo mini-jack	Stereo mini-jack	Stereo mini-jack	Two sets of dual RCA jacks	Two stereo mini-jacks	Stereo mini-jack	Stereo mini-jack	Stereo mini-jack	Two sets of dual RCA jacks
None	None	None	None	Headphone jack	Headphone jack	Headphone jack, line-out	Headphone jack	None	None	Headphone jack
Left & right	Left & right	Master	Left & right	Master	Master for input #2 only	Master	Master	Left & right	Left & right	Master for input #2 only
Bass/treble	Bass	Bass/treble	Treble/bass/ superbass	Bass/treble	Tone	Tone	Tone	None	Bass/treble	Tone
None	None	None	None	None	None	Single-knob A/B mixing	None	None	None	Partial, through volume control
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Batteries or optional AC adapter	Batteries or optional AC adapter	Batteries or optional AC adapter	Batteries or optional AC adapter	External AC adapter	External AC adapter	External AC adapter	External AC adapter	Batteries or optional AC adapter	Batteries or optional	External AC adapter
None	Monitor	None	None	None	Under-monitor design	Monitor	Wall or monitor	Monitor	Monitor	Under-monitor design
Beige	Beige	Beige	Black	White	Beige	Gray	Dark gray, platinum	Buff	Buff	Beige
							Stereo imaging circuit			
$39.95	$49.95	$59.95	$69.95	$129.95	$149.95	$150	$229	$29.99	$44.99	$150

POWERED SPEAKERS FOR MULTIMEDIA

Vendor	Roland				Sony		Sound Minds	Thor Mfg.		

CS-30

MA-7

MA-12C

MA-120

SRS-58PC

SRS-88PC

Twin Sound

MiniBlaster

MiniBlaster HQ

MiniBlaster LX

Model	CS-30	MA-7	MA-12C	MA-20	SRS-58PC	SRS-88PC	Twin Sound	MiniBlaster	MiniBlaster HQ	MiniBlaster LX
Reader Service	608	608	608	608	609	609	610	611	611	611
Phone	(213) 685-5141	(213) 685-5141	(213) 685-5141	(213) 685-5141	(201) 368-9272	(201) 368-9272	(408) 374-7070	(702) 324-6600	(702) 324-6600	(702) 324-6600
Frequency Response	N/A	N/A	N/A	N/A	100 Hz-20 kHz	70 Hz-20 kHz	250 Hz- 20 kHz	150 Hz-15 kHz	120 Hz-22 kHz	20 Hz-22 kHz
Power output (watts per channel)	3.5	7	10	15	3	10	2	2.5	5	10
Driver configuration	Two-way	One-way	One-way	One-way	One-way	One-way	One-way	One-way	Two-way	Two-way
Inputs	Two sets of dual RCA jacks	Three 1/4-inch phone jacks for microphone, line 1 and line 2 inputs	Three 1/4-inch phone jacks for microphone, line and instrument input	Three 1/4-inch phone jacks for microphone, line 1 and line 2 inputs	Stereo mini-jack	Stereo mini-jack	Stereo mini-jack, sound card, microphone	Stereo mini-jack	Three sets of dual RCA jacks, stereo mini-jack	Four sets of dual RCA jacks
Outputs	Headphone jack	Headphone jack	None	None	None	None	Headphone jack, line out	None	Line out	Line out
Volume controls	Master for each input	Master for each input	Left & right	Left & right for each input	Left & right	Left & right	Left & right	Master	Master plus volume controls for each input	Master plus volume controls for each input
Bass/treble (tone) controls	Tone	Tone	Bass/treble	Tone	Tone	Tone	None	None	None	Bass/treble and loudness for each input
Mixing controls	Yes	Yes	No	Yes	None	None	No	No	Yes	Yes
On/off switch	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Power supply	External AC adapter	Internal AC	Internal AC	Internal AC	External AC adapter or batteries	Internal AC	From computer	External AC adapter	External AC adapter	External AC adapter
Mounting brackets	Under-monitor design	None	None	None	None	None	Fits inside 5.25-inch PC drive bay	None	None	None
Colors	Beige	Beige	Beige	Beige	White	White	Black, beige	Platinum or black	Ebonized oak sides	Ebonized oak sides
Additional Features					Amplifier bypass switch					
Price (pair)	$170	$230	$290	$320	$129.95	$199.95	$119	$69	$329	$429

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Unlike other digital video software, D/Vision gives you true videotape picture quality. SupeRTV, an enhancement of Intel's RTV (Real Time Video), lets you "print" high quality, full-screen video directly to videotape.

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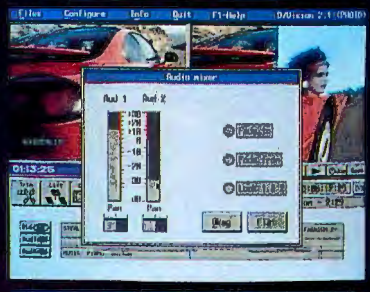
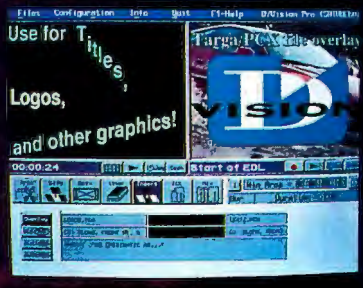
Special Effects and Audio Mixing



Overlay Targa/ PCX Files on Live Video



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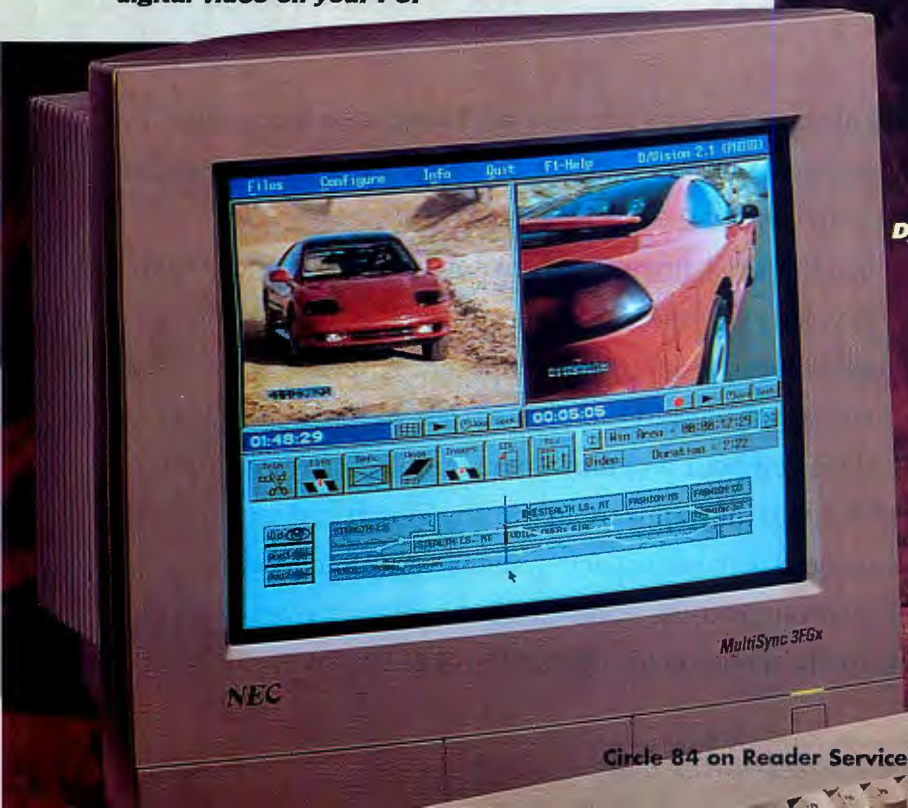

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MEDIA SUITE PRO

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Third, when you add up all the extras you need with less capable systems, you'll find Media Suite Pro even more attractive. And best of all, it's from Avid, the leader in digital video for over five years. For more about the beautiful features of the model on the right, call: 1-800-949-AVID.

A · V · I · D

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Circle 72 on Reader Service Card

EDITOR'S PICKS

While we couldn't try out every speaker system in the chart, *NewMedia* received a sampling for review. Here are our impressions:

SONIC SATISFACTION:
Our first choice here is the Altec-Lansing ACS300 system. This satellite/subwoofer trio would not embarrass a stereo receiver, and in fact, we use its handy second input for an audio CD player. The venerable and popular Bose Roommate and Acoustic Research Powered Partners speakers are close sonically, but both lack a second input. We wish that any of these systems had a headphone jack for those times when we don't want to blast out our neighbors.

CONTROL FREAK HEAVEN:
Roland and MiniBlaster take the prize here. Each speaker series features models with three or four inputs and full mixing controls: You can combine audio from a sound card, CD player, microphone or instrument. They are both excellent choices for creative work.

CHEAP BUT FILLING:
At the low end, Koss, Labtec and Recoton offer a range of models under $100. They are good for kids' games and voice applications where high fidelity is not imperative.

BUSINESSLIKE:
For offices, under-monitor units such as Labtec's CS-1000 and the Roland CS-10 and CS-30 are space-saving and easy to use. Their subwoofers provide very good sound for such small units. Sound Minds' Twin Sound system, a unique solution that fits inside a standard 5.25-inch drive bay, saves even more real estate and is great for portable sound.

MIDDLE-OF-THE-ROAD:
Several speaker systems marry very good sound quality and reasonable prices ($150-$250). These will do for most localized presentations and personal applications. Monster Cable's MacSpeaker/Persona PC lookalikes sport a stereo imaging circuit and three-way drivers. Altec-Lansing's ACS100 and MICS' MediaMatch are our midprice choices for those who need to mix more than one input.—*Becky Waring*

(continued from page 31)

placed anywhere. Other models incorporate right and left channels into a single unit that fits under a monitor or in a PC drive bay. The advantages of these systems include portability, easy configuration and less cable clutter.

Many of these systems can be mounted on the sides of your monitor or on the wall to save desk space. A few may be run with batteries for portable presentations.

Conclusions

The two most important decisions in buying speakers for computers are how much you need or want to invest in sound quality, and how many inputs you require. Then look for perks such as bass and treble controls and headphone jacks. Plug them in and crank up the volume! **M**

Rapier 24XTV

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Sex & the

AS EROTIC—SOME SAY OBSCENE—MULTIMEDIA PRODUCTS STORM THE MARKET, THERE ARE CALLS FOR LAW ENFORCEMENT, LABELING AND SELF-CENSORSHIP. DOES THE FIRST AMENDMENT COVER INTERACTIVE MEDIA?

By Suzanne Stefanac

It was bound to happen: libidinous exchanges heating up bulletin board services; raunchy ads in the back pages of major computer magazines touting digitized scans and striptease QuickTime movies; risqué demos at computer trade shows attracting hordes of oglers; experts at communications conferences seriously debating whether 976 dial-a-porn services will be videoconferencing's killer application. In short, multimedia sleeze has arrived.

By all accounts, the slew of erotic and pornographic CD-ROMs that have recently arrived en masse are selling quite well. One adult-oriented game, *Virtual Valerie*, is probably the best-selling CD-ROM title in the genre's short history,

New Media

according to Chris Andrews, president of Unidisc, publisher of *The CD-ROM Directory 1993*. "It's a moving target, but it looks like *Virtual Valerie* has captured about 25 percent of the erotic sector, selling about 25,000 a year for a total of 100,000 units." Andrews says the erotica sector is growing rapidly.

The popularity of these titles leads some multimedia developers—even those who disapprove of off-color content—to utter muffled cheers. After all, back in the early '80s, adult-oriented videotapes helped drive the growth of the videocassette industry. It makes sense that sex might do the same for CD-ROM drives, sound boards, high-resolution displays and, in the future, interactive TV decoders. The socially redeeming titles will follow and all will be well, right?

Many disagree. Feminists worry about the objectification of women and possible links between pornography and sexual harassment, conservatives worry about eroding family values, and parents fret that yet another medium is tempting children into growing up too fast. Some industry critics argue that it's the final bastardization of an interactive media already rife with violent shoot-'em-up computer games.

As calls for content labeling and even outright censorship begin to arise, others respond that such measures will only erode our already besieged First Amendment rights. Allen Ginsberg, whose poem "Howl" was banned from the airwaves by the FCC, warns, "Censorship of sexual discourse or public communication about sex is one way of keeping the populace under control. If you can censor the seat of one of the greater emotions, then you've got the other varieties of communication and consciousness under control. In a sense, metaphorically, once you get people by the balls, then you've got them."

The debate is age-old; only the technology is new. With each paradigm comes fresh ethical, cultural and legal dilemmas. Some involve courtroom precedents (see "Obscenity: A Matter of Definition," page 44); others explore the interface between new technologies and murky regulations (see "Who Will Police Broadband Delivery?" page 46); still others speculate on the moral and societal implications of linking computers and sexual relations (see "Porn and Sex Crime: Is There a Link?" page 42 and "Cybersex 101" page 41). Beneath the seamy veneer of this high-tech demimonde lies a fascinating array of problems, possibilities and challenges.

Dial-Up Erotica

Multimedia erotica didn't start with established pornographers luring innocent computer users into digital dens of iniquity. It began with pockets of racy e-mail (erotic mail?) exchanges, anonymity and distance bolstering the nerve of many a yeasty nerd and nerdette. With the advent of inexpensive scanners and the handy GIF format, a flurry of poorly resolved cheesecake, beefcake and worse began clogging the up- and download lines of major bulletin boards. Then came low-frame-rate video clips of striptease and come-ons, most sporting all the finesse of an earlier generation's grainy stag films.

Today, the number of electronic pen pals exchanging bawdy bytes is impossible to track, but the adult-only areas of most major on-line services are decidedly active. The alt.sex.newsgroups on the Internet are "definitely among the higher traffic areas," according to Jack Rickard, editor and publisher of *Boardwatch* magazine. This should surprise no one in France: Their national fiber-optic Minitel system is largely funded by phone sex.

In addition, dozens of private bulletin boards that specialize in adult chat areas and graphics exchange have sprung up. The largest—Event Horizons—raked in $3 million last year and boasts 64 lines and a clientele of 35,000 customers internationally. The board has its family-

ILLUSTRATIONS BY LAXSYNTAX INTERNATIONAL; ORIGINALS FROM BODYCELLO'S *HEAVENLY BODIES*

ORIGINALS FROM REACTOR'S *VIRTUAL VALERIE*

oriented areas, but 85 percent of the traffic occurs in the restricted-access adult area.

Steering clear of scans or movies that involve under-age models, animals, S&M or violence, Event Horizons sticks to tried-and-true soft porn themes. To maintain such standards requires vigilant monitoring, which is not only difficult but unpopular. When the FBI launched a recent investigation into kiddy porn on America OnLine, it set off a vigorous on-line debate about privacy issues.

More X-rated boards are on the way. Playboy Enterprises Inc., which recently won a $500,000 suit against Event Horizons for distribution of digitized photos that originally appeared in *Playboy* magazine, is reportedly planning to introduce its own adult bulletin board.

Sinful CDs

With the expanding installed base of CD-ROM players came the inevitable compilations of stills culled from on-line databases. Porn fans could now avoid the time and expense of downloading huge graphics files. PC Componet was there first with *Visual Fantasies*, which has sold more than 10,000 copies. Starware Publishing, one of the largest CD-ROM vendors of adult materials, ships more than 1,000 orders a month.

QuickTime was still wet behind the algorithms when tiny nudes began frolicking jerkily across Macintosh screens. Space Coast Software's ad for their *Bare Assets* CD-ROM entices, "How about a QuickieTime?" Viewers are greeted with 12-fps QuickTime clips of models who, among other things, report their preferences in computing hardware and software.

Romulus Entertainment transferred the popular videodisc, *House of Dreams*, to CD-ROM, providing the first fully digital porno movie. Like *Bare Assets*, it runs in a dwarfish 160-by-120-pixel window. An upcoming feature, *Secrets*, will run 80 minutes and incorporate some degree of interactivity.

Lights, Camera, Interaction

The question inevitably arises, why spend money to put up with mediocre resolution and frame rates? Why not just pop down to the corner porno emporium and pick out a couple of hot videos? "I think the allure is associated with the romance of telecommunications, the romance of computing," says sci-fi author Bruce Sterling. "At the moment, it's still a fascinating idea that you can actually put a dirty picture on your computer screen. But by itself, it won't be amazing for very long."

The success of adult multimedia will no doubt hinge on interactivity. The ability to choose your virtual partners, scenarios and pace, plus the fact that you can "converse" with your cybermate, all lend a degree of personal involvement that no XXX movie or magazine can hope to match.

Interactive sleaze began in 1986 when Mike Saenz designed his well-endowed, if cartoonish, Maxie MacPlaymate to respond to the user's mouse clicks. He followed that infamous floppy with *Virtual Valerie* (see the review in Big Screen, *NewMedia*, November 1992). Capitalizing on the appeal of these interactive scenarios, Saenz's company, Reactor, will soon be releasing a "director's cut" of *Valerie* and an even more explicit and complex *DonnaMatrix*.

Pushing the envelope a bit more is the *Penthouse Interactive* CD-ROM soon to be released by ICFX. The new company is made up of president David Biedny, a veteran of the Industrial Light and Magic school of special effects, and executive producer James Ehrlich, late of CBS Records. The scene is a "Penthouse Pet" photo shoot. Players choose the model and the poses, and during the short video segments they snap stills which can be stored or printed.

Interotica's current release, *NightWatch*, allows the voyeur/player to snoop around a plush singles resort via a suite of security moni-

tors. The company's soon-to-be-released *Dream Machine* amplifies the interaction, providing an on-screen female guide who helps the player choose from among a number of fantasy portals. As the action unfolds, the guide begins to adopt behaviors suggested by the player's choices, gradually conforming to a personal ideal.

Dangerous Illusions

Some believe this illusion of control can encourage offensive behavior in real life. "What's wonderful about interactive media is also what's reprehensible about this kind of application: the idea of handing control over to the user," says Linda Jacobson, editor of *CyberArts* (Miller Freeman, 1992). "Smut on paper or video is much more benign than interactive stroke books. These products show men that they can have control over women. You can force them to do your bidding and they do it willingly. I am absolutely opposed to censorship, but I think men have to be made aware that this kind of thing can make women feel very uncomfortable."

Jacobson is hardly alone in opposing the recent burgeoning of cyberbabes. Last January's Macworld Expo in San Francisco served as a backdrop for some serious wrangling on the topic. The floor was dotted with booths displaying blue material, and we're not talking IBM. Interotica's Hikaru Phillips recalls an incident that occurred while he was demonstrating *NightWatch*: "People were crowded around the booth and really seemed to be enjoying the product. One woman, however, reacted violently. She grabbed the mouse and claimed that she was being sexually harassed. She continued to complain loudly for about 45 minutes."

Mike Hallal, president of Mitch Hall Associates, which runs the Macworld shows, says there were only a dozen or so complaints, but "That's a dozen too many. We don't feel we have any right to make a value or moral judgment about what people want to see, but the visibility and degree of accessibility of some of the booths will not happen again."

Josh Gordon, developer of Bonobo Productions' *Digital Dancing*—a striptease CD-ROM that invites you to play the kid's game "paper, rock, scissors" is concerned about the decision to ghettoize adult titles. "It's censorship by denial," says Gordon. "A show promoter or software distributor is going to say, 'This is neat, but we can't carry it. Somebody might complain.' All it takes is one or two complaints. This kind of thinking is not driven by consensus or reasonable analysis. It's driven by fear."

Suzi Nawabi, vice president of marketing for Educorp and president of her own adult-oriented media company, BodyCello, reports the beginning of a backlash in the magazine publishing world as well. "It's very difficult for us to get advertising in computer publications. We were showing very tame pictures—head shots—but some magazines stopped taking our advertising," says Nawabi. "Yet when I ask these magazines about the reader service response for our products, they tell me we consistently have the greatest response."

Manufacturing can prove another bugaboo. The big three CD-ROM pressers—Sony, Nimbus and DMI—all have policies that limit their willingness to press discs with questionable content or packaging. One reason was voiced by Leon Whidbee of DMI. "The technology, particularly for motion images like QuickTime movies, generally requires that somebody sits down to prepare the material for manufacture by watching it frame by frame. With some of the more explicit material, this can be quite offensive."

Go to Jail, Do Not Pass Go

It might be more than offensive. It could be against the law. Ever since the Supreme Court's 1973 *Miller* ruling giving communities the right to legislate obscenity, a smorgasbord of laws banning pornography has speckled the map.

A Washington state law, for instance, recently banned the sale or exhibit of "erotic music" to minors. The rub was, first of all, that any judge could decide whether a particular lyric might appeal to a minor's prurient interest, and secondly, rock 'n' roll and sex are inseparable. Many were predicting that most pop albums sold in the state would come wrapped in a brown paper wrapper. But this is a state that hosts a $10-million-a-year business—the grunge rock of bands such as Nirvana and Pearl Jam. Last November, a superior court judge struck down the law, saying that it was unconstitutionally vague and would lead to a chilling effect on artists. An identical bill is floating around in the Oregon legislature, and if it passes it will surely be contested. So goes the constitutional jig in the wake of "community standards."

An even more severe law has been in effect in North Carolina, Republican Sen. Jesse

CYBERSEX 101

Imagine a sleek-fitting wash-and-wear erotogenic skin bristling with electrodes and diodes and probes and sensors finely attuned to your most subtle whims. Add a high-bandwidth link and a similarly garbed partner or simulated cybermate, and voilà! cybersex.

Films like *Lawnmower Man*, cyberpunk fiction and techno-lecherous magazines such as *Future Sex* have popularized a vision of promiscuous virtual reality. The current realities are a bit more mundane. A few primitive attempts, such as the Lulu project created by Pekka Tolonen in Finland, push the limits of teledildonics, but it may be decades before cybersex systems engaging the full range of human erotic sensitivities arrive.

Meanwhile, some see possible social benefits in the emergence of virtual gratification. "Sophisticated sex simulation will be ubiquitous and accepted as legitimate entertainment, education and therapy," predicts Reactor's Mike Saenz. "Just as a flight simulator is used to train pilots before they climb into a real plane, I think sex simulation could be used to prevent unwanted pregnancies and warn about sexually transmitted diseases."

This sentiment is echoed by Brenda Laurel, whose work at Interval Research focuses on individual and cultural differences and how they interrelate. "I see an increasing trend in new media, and network media in particular, to push on the boundaries of appropriate sexual expression in the culture at large. I find that tremendously exciting," says Laurel. "We have a new representational world that allows people to construct representations of their own sexuality for each other. And these constructions are no longer bounded by the narrow vocabulary of real-world fashion and stereotypes.

"Teenagers, for instance, generally have a pretty narrow palette with which to express their sexuality. And yet we're starting to see opportunities with computer networks and to some extent interactive games, to construct flavors of one's sexual persona that aren't stereotypes, that escape those cages. I think that's all for the best. The more we can do to bring our sexual energies to bear in the emergence of new media paradigms, the better."

Finally, ICFX's David Biedny offers a business hint: "We are the society most adept at fantasy and illusion. The fact is, fantasy is America's greatest product. It's arguably all we have left. Cars? Hardware? No, it's movies. The weird thing is that we seem afraid to admit this. If we did, we could own this genre forever."—*S.S.*

PORN AND SEX CRIME: IS THERE A LINK?

What is it about obscenity that makes it a crime? Certainly any instance involving coercion or in which someone is harmed is already covered by law, as is the involvement of children. But many feel it's not just the production of pornography, but the ramifications of the consumption of erotic materials that need to be examined. Again and again, there have been attempts by anti-pornography groups to prove a cause-and-effect link to rape and other violent sex crimes.

This debate came to a head in the wake of then-Attorney General Edwin Meese's *Final Report* from his Commission on Pornography, released in 1986, which concluded, "There is a causal relationship between exposure to sexually violent materials and an increase in aggressive behavior directed toward women."

Two of the 11 commissioners—Ellen Levine, *Woman's Day* editor, and Judith Becker, associate professor of clinical psychology at Columbia University—issued dissents. Becker was adamant: "There are no scientific studies that show that exposure to nonviolent sexual material causes a person to commit a sexual crime or become more sexually aggressive."

These sentiments echoed the findings of the 1970 President's Commission on Obscenity and Pornography, which concludes, "[We found] no evidence that exposure to or use of sexually explicit materials plays a significant role in the causation of social or individual harms."

Tipper Gore headed the labeling push by the Parents Music Resource Center. Edwin Meese led the Commission on Pornography, 1985-86.

Two other studies support this view. The British Inquiry into Obscenity and Film Censorship reads, "We unhesitatingly reject the suggestion that the available statistical information for England and Wales lends any support at all to the argument that pornography acts as a stimulus to the commission of sexual violence." In Denmark, after removing all obscenity laws, the incidence of sex crimes actually declined by nearly 50 percent. A report by the Danish Council of Forensic Medicine reads, "No scientific experiment exists which can lay a basis for the assumption that pornography or 'obscene' pictures and films contribute to the committing of sexual offenses by normal adults or young people."

Anti-pornography advocates remain unconvinced. "There's also no cause and effect that shows that cigarette smoking causes cancer," counters Nancy Clausen, communications director for the National Coalition Against Pornography. "Basically that's because it would be unethical to conduct such a study. You would have to literally show someone pornography to the point where they would go to the woman in the next control room and rape her."—*S.S.*

Helms' turf, since 1986. Because it is a felony in that state to possess materials that an individual community has deemed offensive, a profound chill has settled over much of the state. "The law is draconian," says Jim Shields, executive director of the North Carolina American Civil Liberties Union. "There are teachers who choose not to use certain sex education or literature materials because they don't know whether or not they're in violation. Because the law is applied unevenly, this uncertainty is pronounced for individuals or businesses alike. They're all afraid."

Each legislative season, a new crop of anti-pornography laws is proposed and a few pass. Multimedia vendors of adult material will have to make marketing decisions based on these local obscenity rulings. Jasmine Multimedia Publishing boasts the world's largest library of video music and stills on CD-ROM, but president Jay Samit says, "We've stayed out of the adult-oriented CD-ROM business. The Supreme Court rulings on 'community standards' are just too ambiguous. You can rent a video in Los Angeles that could land you in jail for 10 to 20 years in another state."

A Litigious Society

Not all vendors or distributors of questionable materials will go to jail. Some will just go bankrupt. "The low-lifes and subhuman mentalities that traffic in dirty sex are running a terrific risk in a society as litigious as ours," says Jack Thompson, a Florida lawyer largely credited with the 2 Live Crew busts and a recipient, with Oliver North, of an ACLU 1992 Savonarola award for instances of art censorship. (Thompson and North advocate that Ice T, the rapper responsible for the single "Cop Killer," be tried under sedition laws.) "I think you'll have parents horrified that their kids have hacked into the computer systems to get at this stuff and they are going to bring product liability or negligence actions against a distributor. This could make the dial-a-porn cases look mild."

Thompson isn't exaggerating. Ordinances passed in Minneapolis and Indianapolis 10 years ago allowed individuals to bring civil suit against anyone who displayed, in public or in private, material that the beholder deemed pornographic. Written and championed by feminist author Andrea Dworkin and University of Michigan law professor Catharine MacKinnon, the law defined pornography, in part, as "the graphic sexually explicit subordination of women through pictures and/or words." Judge Frank Easterbook, a Nixon appointee, struck down the laws, calling them an attempt at "thought control." The Supreme Court agreed and the laws were overturned.

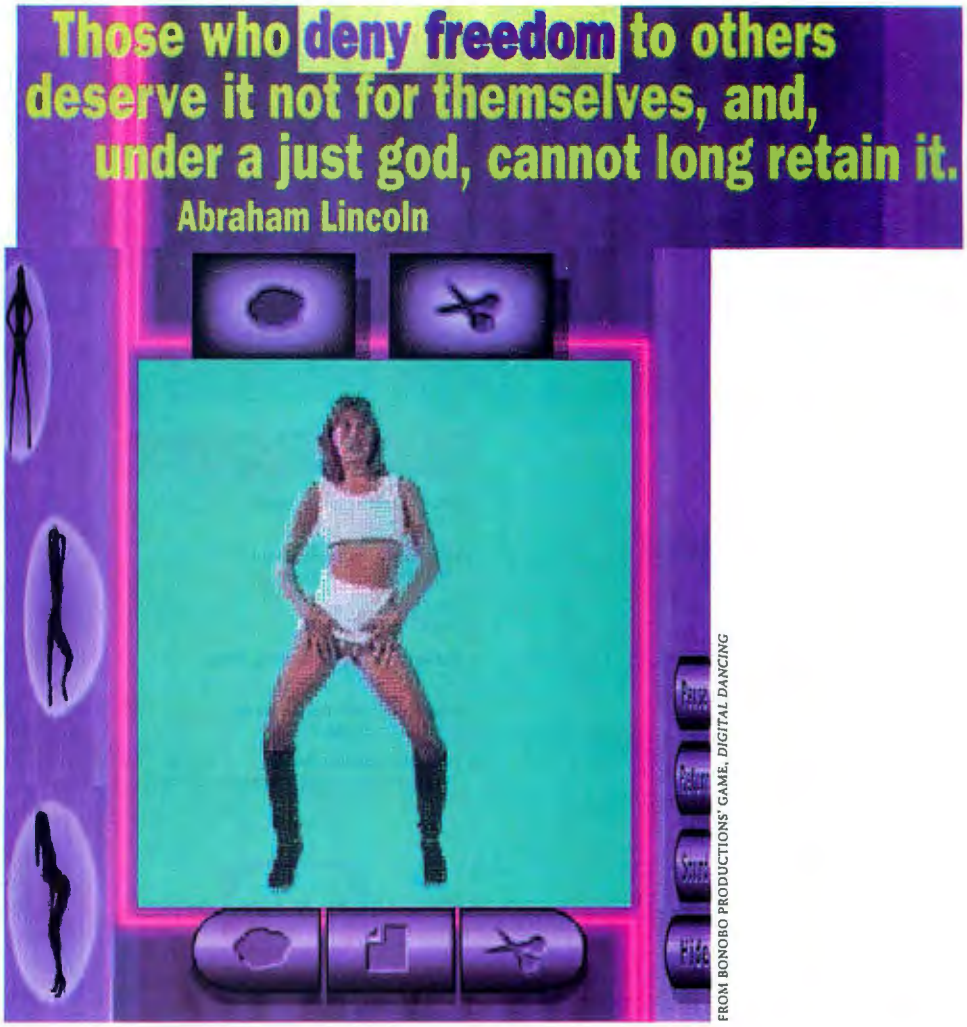
"It's the porn made me do it defense, which is totally inappropriate," says Jonathan Cummings of the ACLU's Arts Censorship Project. "There is just no evidence to back it up."

This past year, however, an unlikely alliance between feminists and ultra-conservatives in the Senate resulted in the Pornography Victim's Compensation Act, a bill based largely on the MacKinnon-Dworkin laws that would allow crime victims to sue—for unlimited monetary damages—the producer, distributor, exhibitor and retailer of a book, magazine, movie or lyric that the victim believes triggered the crime. The bill survived the Judiciary Committee by a 7-6 vote, but died in October when the Senate went home without hearing it. The bill's sponsor, Sen. Mitch McConnell (R-Kentucky), plans to revive it next session.

An almost identical law is pending before the Massachusetts legislature, and other states are considering similar bills. Proving that pornography caused the crime in question would no doubt be difficult, but because the law specifies civil suits, the defendants don't have to win. They just have to exhaust the financial wherewithal of the accused through legal fees.

Even more ominously, enforcement of the Racketeer Influenced and Corrupt Organizations Act (RICO) could be used against those who engage in multimedia porn. RICO allows the Department of Justice to confiscate and destroy all stock and business equipment of involved producers, distributors and retailers if a "pattern" of sales for obscene materials can be

proven. A pattern can consist of two instances, as it did in a pending case, *Alexander v. U.S.* According to the ACLU's Cummings, "The defendant was convicted of selling four magazines and three videos worth less than $200; the government seized and destroyed $24 million in inventory. The Department of Justice has been rather ideologically overzealous for the past 12 years, but we are arguing that prosecutors can't be allowed to suppress protected speech—in this case, almost all of the seized inventory."



FROM BONOBO PRODUCTIONS' GAME, *DIGITAL DANCING*

Porn in the Office

Developers and distributors aren't the only ones who might find themselves vulnerable as a result of cyberporn. With the proliferation of sexual harassment suits, other businesses are also at risk. "Let's say an account executive brings a new X-rated disc into work to show his buddies," says Linda Jacobson. "That's bound to be offensive to some of the women he works with."

Offended deeply enough, women might consider legal remedies against their employers. In *Robinson v. Jacksonville Shipyards Inc.*, women workers at the Florida company complained about photos that were displayed in common areas. A judge prohibited the possession or display of nude women in the workplace.

Mike Godwin, counsel for the Electronic Frontier Foundation, sees even more complex issues arising in the future. "Let's say that I make a large hypertext document available on my workstation for everybody to consult and then somebody finds a way to use it to access something with sexual content. Am I guilty of sexual harassment? In a way, I did post the document, but in a way I didn't. The question is, to what extent have I made it part of the environment? This kind of case is really tricky when you have documents that are in multiple locations—questions about the responsibility of the intermediate sites arise."

Protecting the Children

While there is considerable debate about censoring pornography, there is little argument that children should be shielded from these materials. But whether to leave this task up to parents or to society is another question.

Schools are a constant battleground—an issue of special concern to developers of multimedia educational and edutainment titles. Dictionaries have been removed from dozens of school libraries because they contain, in the words of one charge, "the most objectionable words imaginable." *One Hundred Years of Solitude*, by Nobel Prize-winner Gabriel García Márquez, was eliminated from a California high school reading list because a parent complained that it was "garbage being passed off as literature." The women's health care book, *Our Bodies, Ourselves*, has been banned repeatedly because it is "too explicit" and "filthy." A book on slugs was banned from a California elementary school because, among other "unsuitable" things, it showed "slugs being dissected with scissors."

On the home front, parents worry that movies, television and rock music are undermining their best efforts at instilling healthy values in their children. And now they're beginning to see more sophisticated, adult-oriented titles arriving on kids-oriented gaming platforms, such as the new CD-equipped Sega Genesis.

While most would reject any attempt at outright censorship, many parents see in warning labels and rating systems a viable solution. Developers, distributors and retailers look to these systems as a wedge against criminal or civil suits.

At least one multimedia vendor, Sierra, has actively sought a labeling agreement among its peers. Al Lowe, the designer behind the soft-porn *Leisure Suit Larry* series, says, "I think we need a ratings system like the MPAA [Motion Picture Academy of Arts]. I'm speaking not only as a game designer, but as a parent."

Mark Media, marketing director for Pixus, a company that recently pressed a QuickTime version of the adult-film bestseller, *House of Sleeping Beauties*, offers a more pragmatic reason for supporting labeling. "Some self-regulation could be a good thing," says Media. "It gives the consumer an idea of what to expect. Besides—when something is labeled as explicit, it can actually cause sales to skyrocket."

Labeling: Censorship or Consumer Protection?

The problem with MPAA ratings, as critics such as the American Library Association point out,

OBSCENITY: A MATTER OF DEFINITION

The First Amendment to the Constitution reads, "Congress shall make no law...abridging the freedom of speech, or of the press," but there have always been exceptions. Few quibble with excluding libel or espionage from the guarantees, but the issue of obscenity proves much more complicated. Who decides what is obscene? According to what criteria?

Ill-defined or not, obscenity is a crime. It has been since the Comstock Act of 1873 outlawed the transport of obscene materials through the mail, but it wasn't until *Roth v. United States* in 1957 that the Supreme Court first tackled the issue.

Samuel Roth had been found guilty of sending erotic books, magazines and photos through the mail. In upholding the conviction, the Court opined: "A thing is obscene if, considered as a whole, its predominant appeal is to prurient interest, i.e., a shameful or morbid interest in nudity, sex, or excretion."

Justices William O. Douglas and Hugo Black penned a stinging dissent. "The tests by which these convictions were obtained require only the arousing of sexual thoughts...The test of obscenity the court endorses today gives the censor free range over a vast domain."

For more than a decade, juries struggled to apply the *Roth* ruling. In case after case—*Lady Chatterley's Lover* in 1959 and *Tropic of Cancer* in 1964 among them—the courts debated the issue. Finally, in 1973, the Supreme Court saw an opportunity to address the shortcomings of *Roth*, in *Miller v. California*. A California court had convicted Marvin Miller of sending obscene publications through the mail; Miller's appeal claimed that the First Amendment rendered the California law unconstitutional. In a 5-4 vote, the Supreme Court upheld Miller's conviction and instituted a new test: To prove a work isn't obscene, it must exhibit "serious literary, artistic, political or scientific value." (This is sometimes referred to as the SLAPS test.)

In addition, *Miller* introduced the concept of "community standards." Justice William J. Brennan was furious: "Any test that turns on what is offensive to the community's standards is too loose, too capricious, too destructive of freedom of expression to be squared with the First Amendment."

Miller remains the standard in obscenity cases, but the debates still flare. How does a judge or juror decide what constitutes "serious" value for another? How does one square differing "community standards" with interstate and international distribution? And, the perennial question: Should pornographic materials even be illegal? Questions such as these grow increasingly complex with a new twist such as digital media.—S.S.

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NEW MEDIA GRAPHICS

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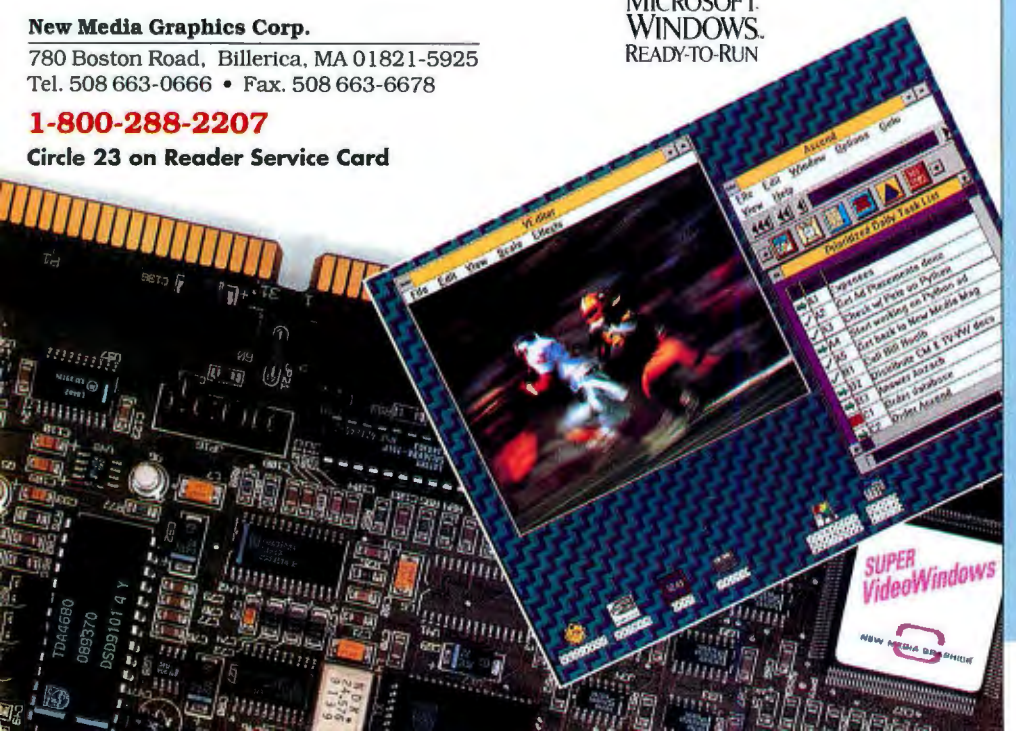

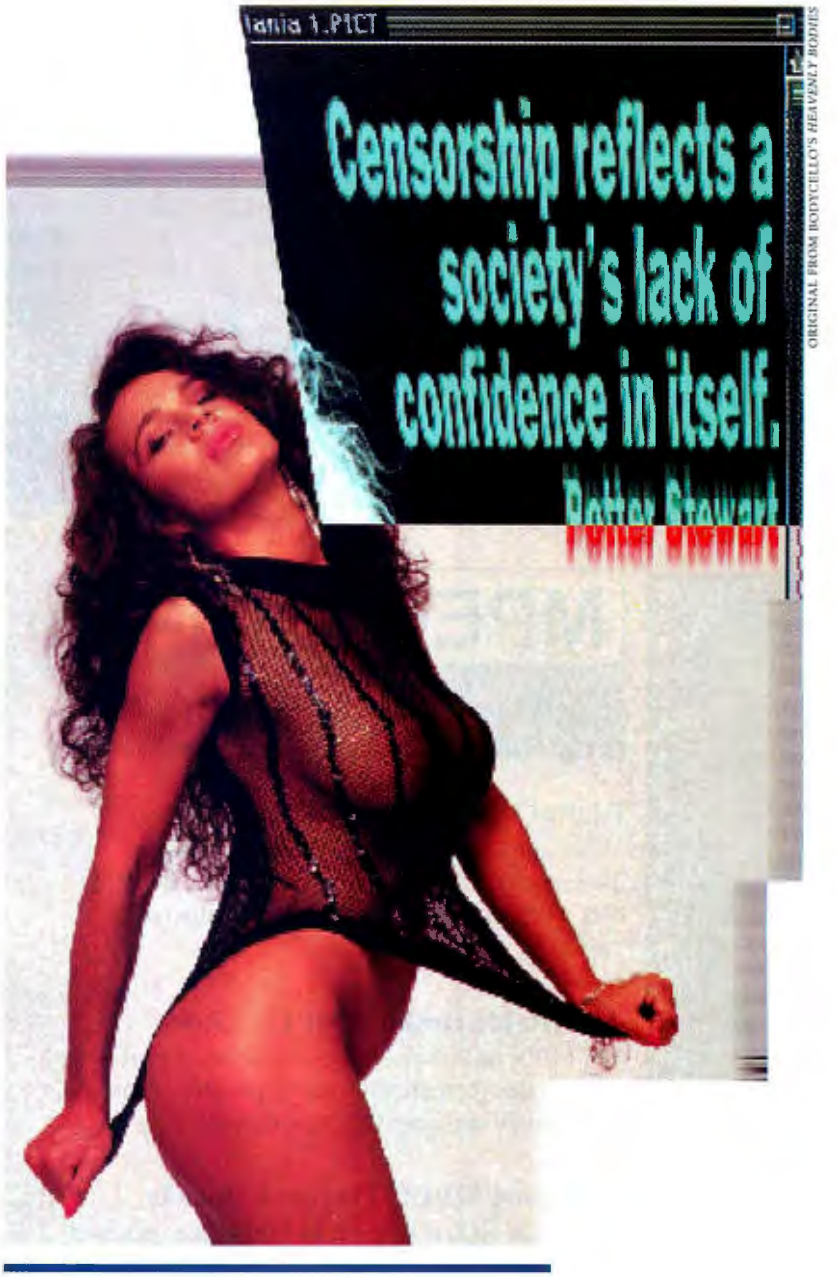

is that they are arbitrarily applied by an 11-person anonymous board that issues no official criteria and offers few recourses by appeal. From an economic standpoint, labels can have a negative effect on distribution and access when large chains such as Blockbuster refuse to carry X- or NC-17-rated films. One result is that viewers in Europe see much more fulsome versions of American movies. (Although, ironically, many of the same countries ban violent American television series.) Another is that video patrons in smaller communities are denied access to these movies. *The Texas Chainsaw Massacre* is always available, however.

Perhaps the best-publicized debate on the pros and cons of labeling took place in the U.S. Senate in 1985 when the Parents Music Resource Center (PMRC), a group co-founded by Tipper Gore, staged a hearing on rock lyrics before the Commerce, Technology and Transportation Committee. Several PMRC members were married to senators on the committee, which prompted Ira Glasser, executive director of the ACLU, to comment "The PMRC is using the threat of legislation to force voluntary compliance. And the threat of legislation doesn't exist since no such legislation would survive a constitutional challenge. The only purpose is to create self-censorship."

The PMRC has adopted a much lower profile in recent years, but Tom Davis, the group's executive director, noted, "I think it's more than likely that at some point, multimedia will also adopt some kind of guidelines. It's to the advantage of the industry."

"Labels are catastrophic," counters Dave Marsh, editor of *Rock and Rap Confidential* and a music critic for *Playboy*. Because many major chains refuse to carry labeled products, much of the public is denied access. Also, Marsh notes, "Labeling is an implicit guilty plea. It's not a protection—it's a target. Ask Time Warner if labeling Ice-T's record protected them. If they put a label on your record, you're going to get prosecuted. And you won't be tried by the sophisticated laws of Silicon Valley—you're going to be tried under the laws of the Bible Belt."

The Costs of Censorship

No one wants to believe that he or she is a censor and yet we all see things in our culture that we can't help thinking we'd be better off without. One of the intents of the First Amendment was to guarantee that individual points of view could be voiced; that the majority couldn't silence a minority. Our Bill of Rights is a rare document—few other nations boast a guarantee of free expression that is as all-encompassing.

Whether or not pornography should be excluded from these guarantees is a perennial topic. Many would rather that violence in media be banned; the number of violent acts and murders that a child sees before the age of five is frightening. Others object to the glut of cigarette and alcohol ads, pointing out links to disease, drug abuse and crime. If we draw the line here, why not there? If the previous administration can target pornography, why can't this one silence commentary that is politically incorrect? It is this rationale that leads First Amendment advocates to plead for a strict adherence to the tenets of freedom of expression.

Denise Caruso, editor of the Seybold newsletter *Digital Media*, illuminates this point of view: "A lot of porno is really violent and unhealthy and I would prefer that it didn't exist. But there's also a lot there that's fine. So how do you police it? Maybe the best way is to educate people and sensitize them to each other. Then, if they are presented with something horrible, the average person will be more likely to reject it. With electronic media, it all comes down to providing customers with choices. Instead of censoring, people ought to exercise freedom of choice. If they don't like something, they don't have to buy it." **M**

Suzanne Stefanac is a San Francisco journalist who has followed computers and the censorship debate for years. This is the first time the two interests have intersected.

WHO WILL POLICE BROADBAND DELIVERY?

Would-be multimedia barons eying broadband delivery of titles and interactive TV applications wonder which, if any, of the current Federal Communications Commission (FCC) rulings will apply to them. Broadcast radio and television, cable and telephone communications are all subject to the FCC.

In an attempt to shield children from harm, the FCC monitors the airwaves for materials that might be considered "indecent," a term open to much wider interpretation than the Supreme Court's narrow definition of obscenity. The FCC defends the constitutionality of its control and hefty fines—Infinity Broadcasting was recently fined $115,000 in a Howard Stern case—by pointing to "scarcity" arguments dating from the 1920s. Because the number of frequencies available to broadcasters was believed to be limited, the FCC granted licenses to broadcasters who became, in effect, public trustees of a frequency and subject to FCC rulings on content. Hence radio, and subsequently broadcast television, lost their First Amendment guarantees.

The scarcity argument withers in the face of hundreds of competing cable options, but there is little sign that the FCC is loosening its hold. Traditionally, cable stations could not exercise editorial control, but since February, cable operators are obligated to enforce "indecency" codes similar to those imposed on their broadcast brethren. Just as the broadcast of adult-oriented material on radio and television stations is restricted to a "safe harbor"—midnight to 6 a.m.—the cable stations are being told to group all indecent programming on a single blocked channel. To view it, subscribers will have to request access in writing.

Whether or not these constraints will apply to digital media is far from clear. Stephen Bailey, senior attorney advisor to the FCC, notes, "Section 10 of the new Cable Act refers to 'programming,' not to information services or textual materials. I don't think we can say at this point whether these new changes would prohibit indecent content in digital media."

And what if telephone companies win the digital range war? "The kind of wire doesn't matter," says Linda Garcia of the Office of Technology Assessment. "What matters is whether we're talking about basic voice services or enhanced information services. The telephone companies have not been responsible for content because they exist under common carriage rules. With many companies merging, some subject to common carrier rules and others subject to the rules that apply to print publishers, I don't think anybody can predict how this is going to sort itself out."

"Common carriage is a very old legal notion," says Daniel Weitzner of the Electronic Frontier Foundation. "[It] requires that certain service providers—telephone companies, truckers, ferries, innkeepers, etc.—provide service to all who ask for it, without unreasonable discrimination. Common carriage is at the core of free expression in the information age. Without this assurance, people communicating unpopular ideas over the new digital infrastructure may have their path blocked by a 'censorious' decision of the network carrier."

Many are looking to the new administration, and hope that Clinton and Gore's vision of an information highway will include guarantees of free expression. Harvard Law School's Laurence Tribe goes further, calling for a constitutional amendment that, much in the vein of the Equal Rights Amendment, promises the same guarantees to *all* media.—S.S.

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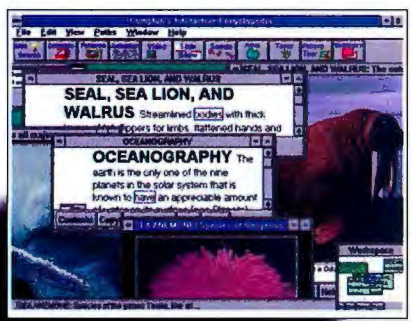

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Spaceship Princess

Spaceship Princess combines an interactive pictorial history of Her Royal Highness the Princess of Wales with a dark science fiction fantasy of the type so popular in multimedia today.

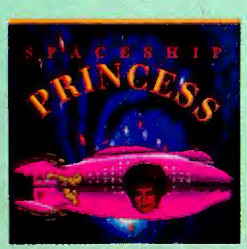
As the story opens, our heroine, Princess Diana, is trapped on planet Chucksmum—yes, the wordplay gets obvious—and your job is to assist her in a daring escape onto an alien spaceship, rechristened *Spaceship Princess* in her honor. Many adventures follow, including outrunning the evil Tabloidians, shaking the clingy WASPisubjectors and foiling assassination attempts by the bomb-throwing Shamrockers.

However, this disc isn't just a game. It also has fascinating facts, engrossing stories and clever quizzes that will keep Anglophiles and royal-watchers glued to their screens.

These sections are: "The P.I.T. Years (Princess-in-Training)," which follows Lady Diana through her formative years; "The Wedding," highlighted by four QuickTime movies; and "Family Scandals," which details all the juicy incidents that brought shame upon the British monarchy.

Other sections have a more game-like appeal. There is "Di's Do's," which morphs Diana through her changing hairstyles and lets you apply other celebrities' hairstyles to her head. (Our personal favorite was the "Don King" look.) "Di's Duds" lets you mix, match and accessorize a myriad of outfits from Diana's wardrobe. Also included is a poignant section called "The Dark Times," focusing entirely on Charles.

We wish that the creators of this title had included a stronger search engine so that facts, dates and individuals could be referenced more quickly. Otherwise this beautiful and engrossing disc brings you as close to Princess Di as possible without having to curtsy.—*Roy L. Payne*

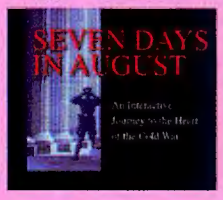


Seven Days in August

In the days before the Berlin Wall went up Americans were singing "Come live, live, live in my fallout shelter" and watching *My Three Sons* on TV. The people of Berlin weren't holding their breath either—they were still crossing the border for work, shopping and a carnival in Kreutzberg.

Seven Days in August focuses on the week leading up to the construction of the Berlin Wall—August 10–16, 1961—and freezes each of those days, letting us examine them from many perspectives. The days are divided into sections: "Berliners," current interviews with people living in Berlin at the time; "Profiles," text biographies of politicians such as John F. Kennedy and Nikita Khrushchev; and "Roundtable," a discussion by five political analysts. Another section, "Home Front" is the U.S. news of the day—Roger Maris and Mickey Mantle trying to break the Babe's home-run record and the Black Freedom Riders facing charges after publicly breaking the South's segregation laws.

People remember and experience history differently. This disc makes that summer of 32 years ago accessible by including historic tidbits of the time—a selection of pop hits, the shows on TV that week and the funnies that ran in the Sunday papers. There are also two games, "For the Record," a baseball trivia quiz, and "First Lady of Fashion," where you match the official function to the outfit worn by Jackie Kennedy.



Seven Days in August fulfills the promise of multimedia. Its beautiful images, recorded speeches and music re-create the mood of the times, while letting users choose their own perspectives.—*Gillian Newson*

TasteMate

A new CD-ROM called *TasteMate* brings browsing for videotapes as close as your Macintosh. It's remarkably useful because you can find practically any video—from the recent *Alien3* to Louis Malle's *Zazie Dans le Metro*—by title, lead performers or director. It's a lot of fun because the titles, actors and directors are linked in hypertext, so what starts out as a quick look for an appealing sci-fi flick turns into an investigation of Stanley Kubrick's films, then on to Malcolm McDowell's career. Searches can easily be done using only part of a name; there are more than 40,000 listings. Each film has its own listing including a brief plot summary, partial cast list and date.

At a loss over what to watch? You can ask the disc to suggest films. *TasteMate* (a dreadful name that sounds like a brand of flavored condoms) is so called because it is your "taste mate," a friend whose opinions you trust. It uses a form of artificial intelligence to call up a list of film titles that are in line with your tastes. It does this by asking you to pick films that you like or might want to watch, and from that provides you with a whole bunch of suggestions. I tried this several times and it seemed to work pretty well.

A section of a dozen QuickTime trailers of recent releases is an added kick. New video titles will be added to *TasteMate* on a quarterly basis, and updates will be available by subscription. All in all, this disc beats Halliwell any day. My only regret is that you can't order your videos with it—yet.

—*Carolyn McMaster*

CREEN

Power Japanese

When a Japanese executive says, "I could not accept the dinner invitation because my socks had big holes," don't stare in bewilderment. Try *Power Japanese.*

The meaty and well-structured language course links communication to understanding the culture. The product ships on 14 floppy disks and includes a sound-adapter plug, headphones, a dictionary, flash cards and exercise books for practicing syllables. The software course is divided into four chapters—"Hiragana" and "Katakana" cover phonetic syllables, and two grammar sections teach sentence patterns, grammatical concepts, translation and reading.

Syllables are introduced in small, digestible bites. By clicking on syllables you can hear them pronounced or see them drawn on a blackboard. There are also entertaining drills that use a scoreboard to test newly acquired knowledge. Each learning session is followed by explanations of difficulties and differences in the Japanese language. This provides a good contrast to memorization drills. A wealth of help and hint buttons includes pronunciation tips and mistakes to avoid.

The two advanced grammar sections include spoken and animated scenes that take place in a shop, subway or art gallery. The voices are clear and make imitation easy. Serious, heavyweight grammatical tables are contrasted with lessons on etiquette, such as the correct way to exchange business cards. I now know the dinner invitation was declined because Japanese people usually remove their shoes when entering a home. And what's more, this well-crafted, humorous course has inspired me to study a language that once seemed impossible to master.

—Celia Skipton

The Outdoor Athlete

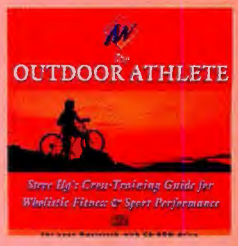
Steve Ilg's Cross-Training Guide for Wholistic Fitness and Sport Performance

"Our bodies are our gardens to which our wills are gardeners." —Shakespeare

This quote perfectly captures the lessons of *The Outdoor Athlete.* Getting into shape is as much a mental and spiritual discipline as a physical one.

Steve Ilg's interactive training CD-ROM goes beyond grunt-and-groan exercise guides to provide a comprehensive program for achieving peak physical condition. Although its focus is heavy training for rigorous sports such as distance running, mountain biking and rock climbing, the accessibility of the text and the wide-ranging spiritual sensibility of the author make this CD-ROM an inspirational boon to all who want to get serious about improving their physical condition.

The HyperCard-based disc is put together exceedingly well. The chapters feature highly readable black text on a yellow background with illustrations, still graphics, embedded QuickTime movies and hypertext quotes to keep the interest level up. Tools, such as a floating navigation palette and an index palette, give the reader quick access to all parts of the program. A progress bar in the upper-right corner shows how much of each chapter has been completed; the bar also supports click-and-drag card jumping. If you need to have a hard copy of the training regimen, the training prescriptions within the chapters can be printed out. In addition to the main text there is an exercise menu which includes 33 weight and training exercises with QuickTime movies showing the proper technique for each.—*Phil Hood*



Sherlock Holmes, Consulting Detective, vol. 2

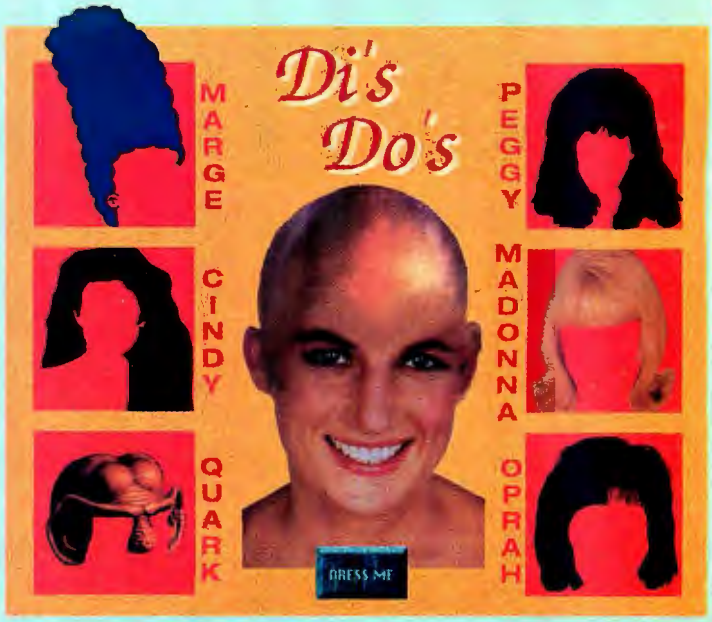
Volume 2 of *Sherlock Holmes, Consulting Detective* won't let you be a slacker. You simply must have your ducks in a row and your clues recorded (a running score is visible on the PC but invisible on the Mac) before you can present your findings to the magistrate. If you try to enter the courtroom before you gather all the evidence the judge throws you out, back to the main menu.

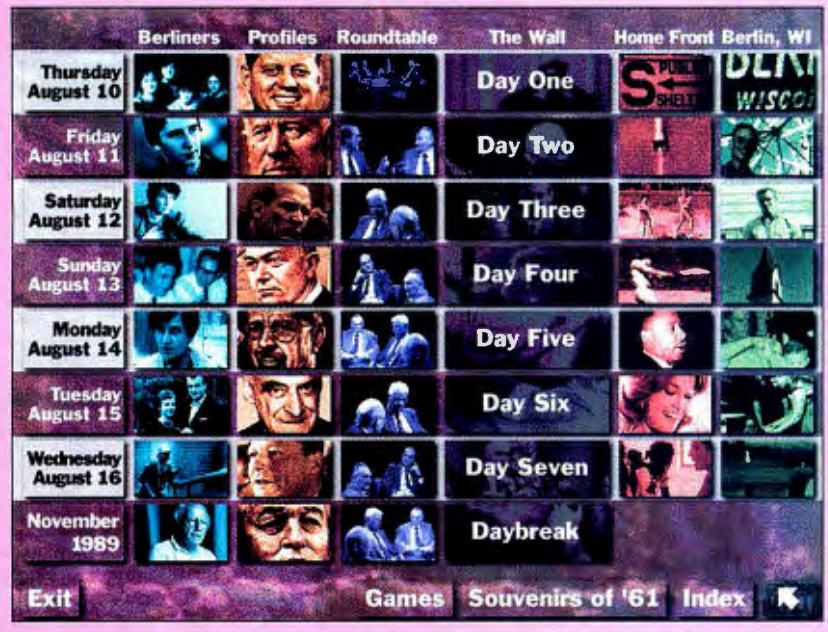
There are three mysteries on this disc: "The Two Lions," "The Pilfered Paintings" and "The Murdered Munitions Magnate." However, the point is not only to solve them but to do it in as few steps as possible—optimally, fewer than the master sleuth against whom you are matching wits.

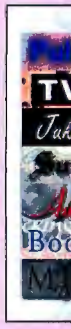
Scanning the pages of the *London Times* is an excellent place to begin gathering clues. Chatting with the likes of social gadfly Sir Jasper Mapes and other sources listed in Holmes' notebook also can shed a bit of light on the mystery. It's helpful to take notes on paper in addition to the names you record in Holmes' electronic notebook. An electronic carriage conveys you and Mr. Watson about town to QuickTime interviews with various experts and suspects.

Icom Simulations Inc. has taken pains to imbue this disc with the same air of authenticity as Volume 1 by using period costumes and sets, but Icom's proprietary video and audio compression technology has been improved for this version. Considering the success of Volume 1—released on eight platforms and more than 225,000 copies sold—it's no wonder they're already working on a third volume.

—Kandy Arnold







Seven Days in August

In *Seven Days in August* users can either choose a path of their own or press a "Day" button and have the information presented to them. The disc includes emotional stories from the people of Berlin whose lives changed when the wall went up. It also details the same turbulent time in the United States, when nuclear war loomed and important civil rights battles were being fought.

Mac Warner New Media, 3500 Olive Ave., Burbank, CA 91505; (800) 593-6334.
REQUIREMENTS: Color Mac, 13-inch monitor, 4 MB RAM, System 6.0.7 or later.
PRICE: $79.98.
Reader Service No. 702

Outdoor Athlete

**"Initial ardor in any pursuit can override
Ilg's warning on over-training in a powe
Though the cardiovascular and strength
Athlete can improve your exercise regin
turn your training into a voyage of self-d
eternal delight."**

Mac Cordillera Press Inc., P.O. Box 3699
REQUIREMENTS: System 7.0 or higher. Bl
Color: Mac II family or above; QuickTime.
Reader Service No. 700

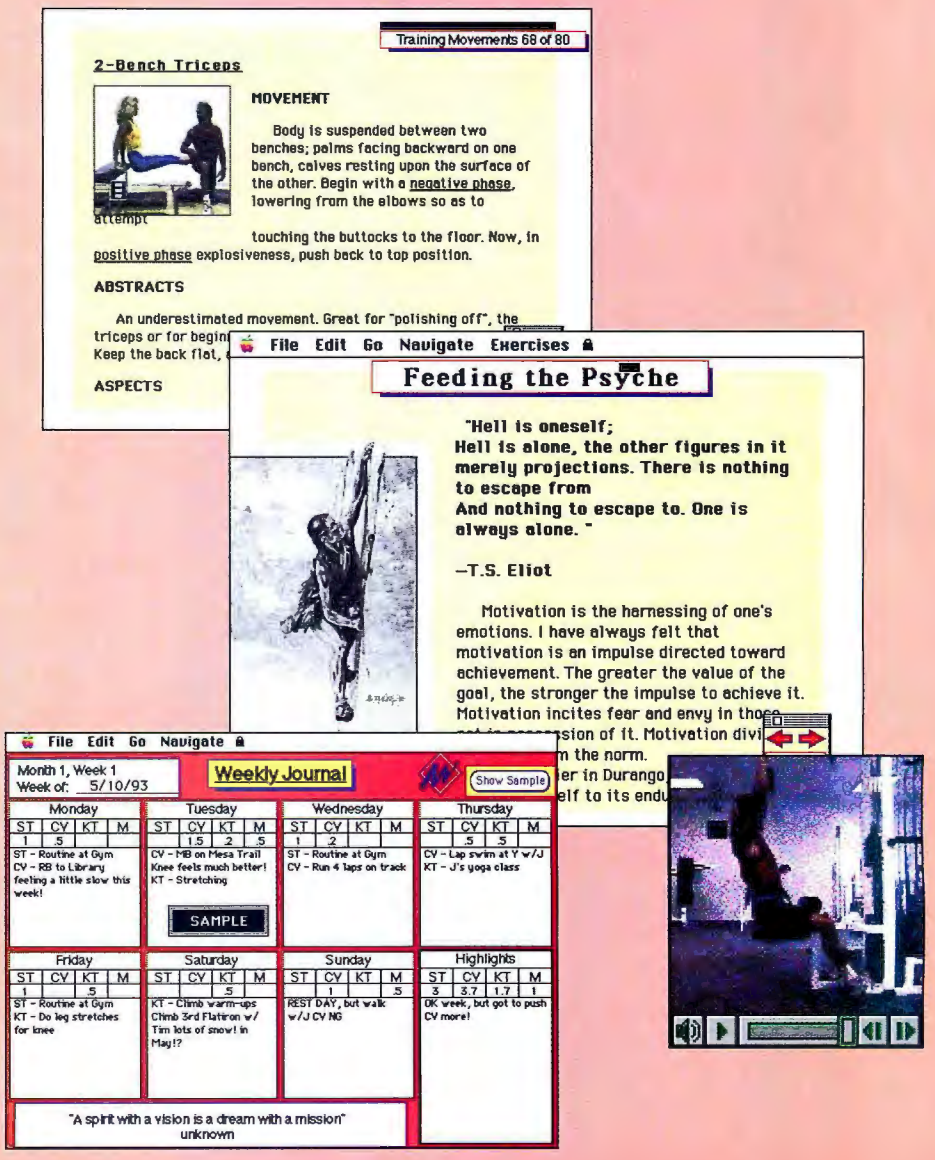
Spaceship Princess

This title, like the woman it's named for, is elegant, sleek, rich with information and possessed of a rapier wit. Combating the perils of space with Diana (left) is especially gratifying, "Di's Do's" (center) lets you be the palace coiffeur and quizzes like "Match the Royal to the Scandal" fill you with high-society knowledge. *Spaceship Princess* teaches that being royal isn't just high teas and carriage rides, it's also a lot of hard work!

Amiga Apricot Atari IBM Mac Sun

April One Productions, 901 Mariner's Island Blvd., San Mateo, CA 94404; (415) 573-5170. REQUIREMENTS: Any system as long as it is expensive. PRICE: $39.99.

Reader Service No. 999

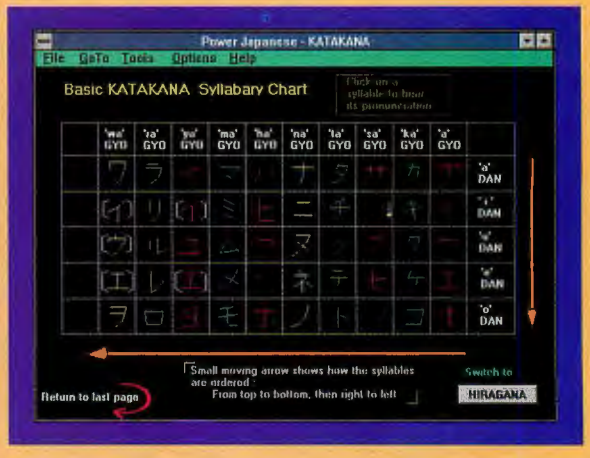


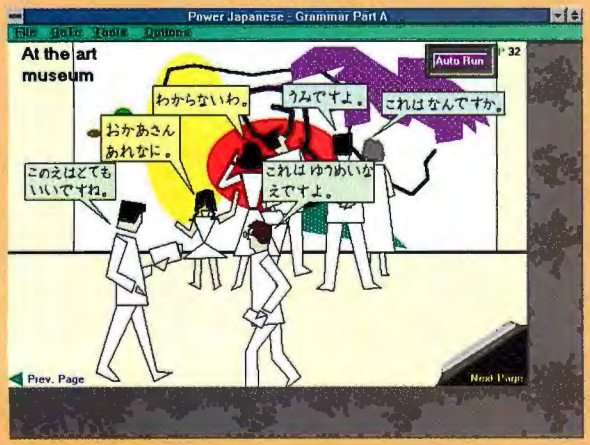
intelligence and invite damage" is Steve
rful chapter entitled "Feeding the Psyche."
training prescriptions of Ilg's *The Outdoor*
ien, the author's spiritual insights aim to
scovery. As William Blake said, "Energy is

, Evergreen, CO 80439; (800) 258-5830.
ack & white: any Mac with hard drive.
PRICE: $39.95.

Movie Listings
Click on any item for more information.
Taste Mate RECOMMENDS
On The Waterfront
This 1954 Film Classic, Winner Of Eight Academy Awards Including Best Picture, Tells The Gripping Story Of An Ex-Fighter's Struggle Against The Crime Lords Of The Waterfront.
Drama
Organized Crime
Suspense
PREV MOVIE
NEXT MOVIE
Starring
Steiger, Rod
Saint, Eva Marie
Cobb, Lee J.
Brando, Marlon
Directed by
Kazan, Elia
Fugitive Kind, The
Apocalypse Now - Collector's Edition
Freshman, The
Young Lions, The
Wild One, The
Viva Zapata
Ugly American, The
Teahouse Of The August Moon, The
Superman
Streetcar Named Desire, A
Sayonara
Reflections In A Golden Eye
One Eyed Jacks
On The Waterfront
Taste Mate
Find It!
Taste Mate Guide to Hollywood
Main Menu
PREFERENCES
FRONT LIST

Power Japanese - HIRAGANA
File GoTo Tools Options Help
'a' GYO あいうえお
Show Instructions
Click on a syllable-symbol to hear its pronunciation.
To see how a syllable is written, click on its associated pencil symbol.
Note : Printed syllables are all written in classic 'MING' style. Power Japanese uses normal script style when writing each syllable out.
Writing Pad
Syllable has 3 strokes
Clear
Prev Page
Next Page


Power Japanese - KATAKANA
File GoTo Tools Options Help
Basic KATAKANA Syllabary Chart
'wa' GYO
'ra' GYO
'ya' GYO
'ma' GYO
'ha' GYO
'na' GYO
'ta' GYO
'sa' GYO
'ka' GYO
'a' GYO
'a' DAN
'i' DAN
'u' DAN
'e' DAN
'o' DAN
Small moving arrow shows how the syllables are ordered : From top to bottom, then right to left
Return to last page
Switch to HIRAGANA


Power Japanese - Grammar Part A
File GoTo Tools Options
At the art museum
Auto Run
わからないわ。
かみですよ。
これはなんですか。
おかあさんあれなに。
このえはとてもいいですね。
これはゆうめいなえですよ。
Prev. Page
Next Page

Power Japanese - Grammar Part A
File GoTo Tools Options
Cultural Note
The ritual of exchanging business cards
P 68
The word for business card in Japanese is
which literally stands for 'name card'.
It is important to present your business cards properly. Follow the procedures below.
Hold your business card with BOTH hands, make sure the words on your business card are facing the other person correctly (i.e. not upside down), and extend the card to the other person with a slight bow. Keep your gaze somewhere in the direction of the other person's chest while effecting this card exchange maneuver (i.e. do not look at the other person directly at this stage.)
Show
DO NOT ever throw your card on someone's desk. This is considered to be extremely rude.
When you are handed another person's card, be sure to receive it with both hands. It is also important to read the card right then and there, as opposed to just putting it in your pocket.
Prev. Page
Next Page

TasteMate

TasteMate **helps you find a video by asking you to pick movies you like (top right), then providing lists of potential films (bottom right) after a second selection step. In each movie listing (center) a mouse click calls up other films by the director or actors, all linked in hypertext. For example, if you call up *On the Waterfront* and are curious what other films Marlon Brando has been in, you can instantly call up a list of his movies. The 12 QuickTime trailers of fairly new videos (bottom left) are fun. Unlike Microsoft's *Cinemania*, *TasteMate* does not show stills from the films.**

Mac Macworld CD Ventures, 501 Second St., San Francisco, CA 94107; (415) 267-1778 (info), (800) 821-1177 (orders). REQUIREMENTS: Any QuickTime-compatible Mac, System 6.0.7 or later, 4 MB RAM. PRICE: $69.95.

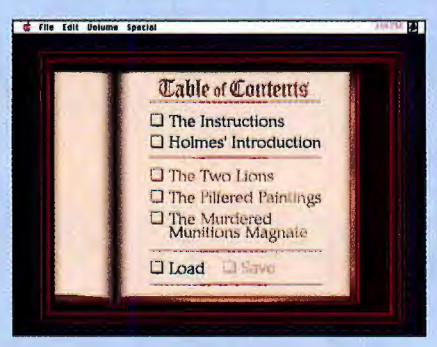
Reader Service No. 704

Power Japanese

Power Japanese **not only covers the basics of the Japanese language, it informs you of the country's business etiquette. The first two parts of the comprehensive course teach you to write, pronounce and recognize Katakana and Hiragana phonetic syllables (top left). Well-organized syllable charts (top right) show how your newly acquired knowledge fits into the structure of the language. An animated scene in an art gallery teaches comprehension and appropriate small talk (bottom left), while another lesson shows how to exchange business cards without committing a faux pas (bottom right).**

IBM Bayware Inc., 1720 S. Amphlett Blvd., Suite 205, San Mateo, CA 94402; (415) 312-0980. REQUIREMENTS: IBM PC 286 and above or PS/2, 2 MB RAM, 10 MB of hard disk space, Super VGA, VGA. PRICE: $389.

Reader Service No. 701



Sherlock Holmes, volume 2

Settle in for a few hours of mystery-solving fun as you match wits against the great Sherlock Holmes. If you played with the first volume of this interactive movie you'll feel at home with the second. The interface remains virtually the same but the video and audio have improved in both quality and quantity, and the three new mysteries will keep you guessing.

IBM Mac ICOM Simulations Inc., 648 S. Wheeling Rd., Wheeling, IL 60090; (708) 520-4440. Requirements: CD-ROM drive with 380–400 m seek time. PC: 286 PC or greater, DOS 3.3, 640 KB RAM, 256-color VGA card and monitor, mouse, audio card; Mac: color Mac, System 6.0.7, 32-bit QuickDraw, 2 MB RAM. Price: $69.95

Reader Service No. 703

At just 11.5 x 9.5 x 2" and 5.5 lbs., the PanelBook is the smallest LCD panel ever, yet still has all the features.

Introducing the PanelBook™ 550 from In Focus Systems.® An LCD panel should fill the room. Not your briefcase. That's why we developed the new PanelBook.

It's the smallest and most convenient LCD projection panel ever. Up to 40% smaller than most panels.

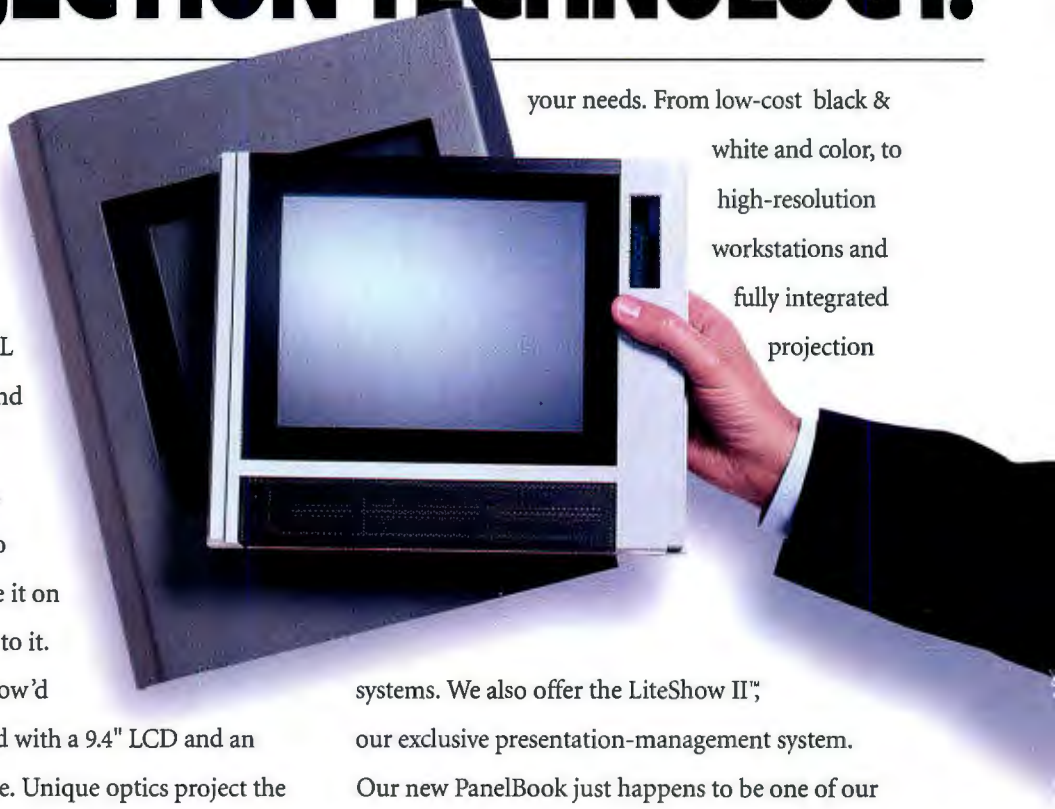
The next-generation active-matrix LCD panel. Keep the features. Lose the weight. With the new PanelBook, you don't give up anything. It's fully featured with integrated data and video.

Inside, you'll find a drawer that expands the panel to full size. It also makes a handy place to store the wireless remote.

Another innovation from the leader in LCD technology.

In Focus Systems offers a complete family of LCD projection solutions for all your needs. From low-cost black & white and color, to high-resolution workstations and fully integrated projection systems. We also offer the LiteShow II™, our exclusive presentation-management system.

ANNOUNCING A VERY SMALL BREAKTHROUGH IN LCD PROJECTION TECHNOLOGY.



So it projects from simple presentations to full-blown multimedia. In 1.4 million colors at 640 x 480 resolution.

For world travelers, the PanelBook supports NTSC, PAL and SECAM video standards and has a universal power supply.

As easy to use as it is to carry. Setup is a snap. Just plug it into most any PC or Mac, and place it on an overhead. That's all there is to it.

The secret is in the drawer. How'd we make it so small? We started with a 9.4" LCD and an innovative design for the future. Unique optics project the PanelBook's image to about the same size as much larger LCDs.

Our new PanelBook just happens to be one of our biggest breakthroughs. Or would that be the smallest?

FOR MORE INFORMATION & A FREE PRESENTER'S IDEA GUIDE, CALL 1-800-327-7231.

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S Y S T E M S

Circle 76 on Reader Service Card

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ILLUSTRATION BY JEAN-PIERRE D'ZAHR/DIGITAL ZONE INC.

Toaster Fever!

NewTek's Video Toaster system is all the rage among video producers—from amateurs to seasoned pros.

By Michael Brown

Tim Jenison had a dream. He wanted to design a tool that would enable anyone to produce professional-quality video, a device priced low enough to become as common in video studios as toasters are in kitchens. He realized his dream in 1989 when, as president of NewTek Inc., he introduced the Video Toaster. Suddenly, the greatest barrier to producing eye-popping, broadcast-quality video and computer animation was no longer a price tag, just talent.

A genuine phenomenon, the Video Toaster has taken the ever-expanding video production world by storm. You can find them in cable TV studios, network affiliates, animation houses and post-production houses as well as corporate video studios, schools, churches and home studios. NewTek has proven the existence of a vast, untapped demand for affordable, professional-quality video tools. In its wake, it has created a cottage industry in third-party add-ons, a community of zealously loyal users, even a magazine (*Video Toaster User*, 408/252-0508).

The Video Toaster is a three-piece add-on board (plus software) that fits into the 24-bit video bus slot in an Amiga. The $2,495 Toaster packs a lot: a seven-channel video switcher, a digital video effects unit, a luminance keyer, a character generator (with 35 built-in fonts and 35-nanosecond resolution), a 24-bit video paint program, a three-dimensional modeler and renderer, video color processing software and two 24-bit frame buffers that also

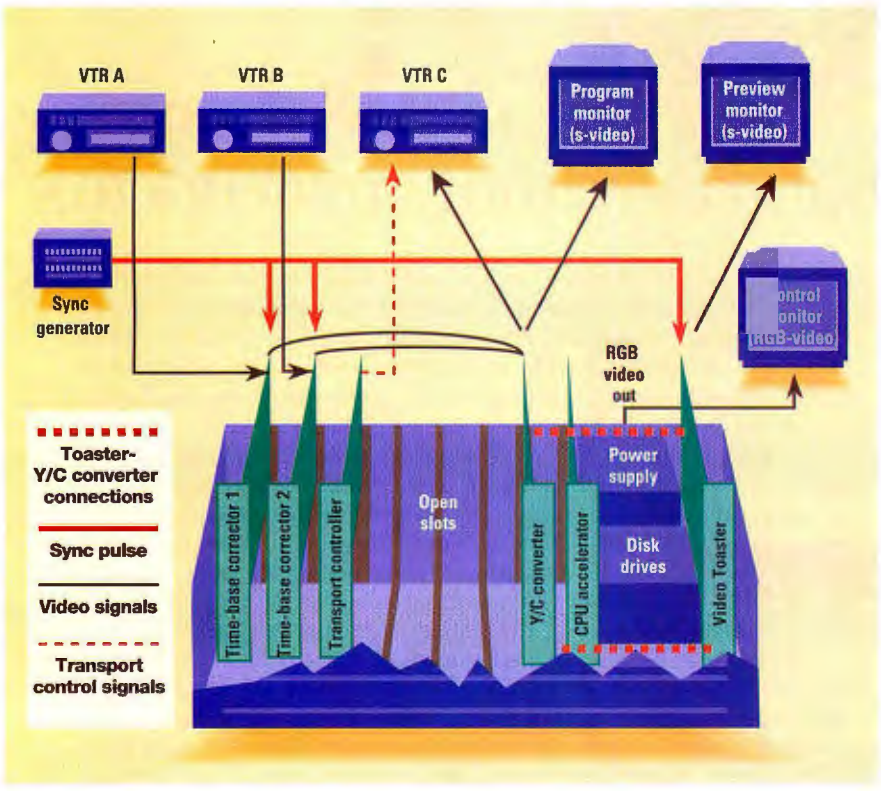
Artwork from Todd Rundgren's upcoming *No World Order* CD created with the Toaster and LightWave 3D.

function as still-stores or frame grabbers. The Toaster's NTSC composite video output is true RS-170A broadcast quality.

You can also buy the Toaster as a stand-alone $4,595 workstation, which consists of an Amiga 2000 with a Toaster board and software. The workstation is equipped with a SCSI controller, a 52-MB hard drive and 5 MB of 16-bit RAM; it can be upgraded with either a Motorola 68030 and 68882 math coprocessor or a Motorola 68040. The upgrade doesn't help if you're using the Toaster solely as a switcher, but it's almost a necessity for working with LightWave 3D, the bundled three-dimensional modeling and animation software. Some people buy the Toaster for LightWave alone, which uses the Toaster's dual frame buffers.

The Toaster performs most of the flashy functions of video production but leaves the more mundane tasks, such as machine control and time-base correction, to third-party products. In an A/B roll video editing suite or a broadcast facility, the Toaster can serve as a switcher, a digital video effects (DVE) unit, a luminance keyer and a video color processing system. In a typical set-up like the one shown below, two videotape recorders (Deck A and Deck B) are used to play back source material that is dubbed to a videotape recorder. A switcher, such as the Toaster, is placed between the two source decks (or two video cameras for live broadcasts) and the single record deck to synchronize the two video signals and to provide visual transitions during cuts between the two source decks.

The distinction between an analog A/B roll system and a digital, non-linear editing system, such as QuickTime or Video for Windows, is that in the former, all the source material and the final production remain on videotape. The video signal passes through the computer, which processes it and adds visual effects, but the signal's ultimate destination is to a video tape recorder. With true digital video, the computer is used to digitize, edit, store and play back the video. In the coming years, digital video will gradually replace analog techniques, or partially digital solutions such as the Toaster, but the current digital, non-linear systems are not suitable for video production because they cannot produce high-resolution, full-screen video in real time.



JOE SIKORYAK

Toaster Fundamentals

Switching functions are central to the Toaster. The unit has four input channels, one preview output and one program output. In addition, each of the two frame buffers and a color background generator can be treated as source video, for a total of seven sources. The switcher can only switch between two sources at once, but it offers high-quality wipes, which describe the transition that occurs between one video signal and another. Version 2.0 added organic effects, such as breaking glass, pouring liquid and fire.

The DVE unit, the luminance keyer and the color processing unit all work from within the switcher. The DVE processes incoming video in real time, enabling you to perform tricks like wrapping live video around a sphere or a cube and bouncing it around the screen. The luminance keyer is used to process two video sources where a foreground source lies on top of a background source. The keyer can then show the background source through holes, or "keys," in the foreground. The key is defined by the luminance (brightness) element of the foreground signal.

The luminance keyer can be set to key on any of 256 levels of either white (high luminance) or black (low luminance). The Toaster does not support chroma keying, which enables the key to be any color. Chroma keying is commonly used on TV weather shows when the meteorologist stands in front of a map.

The Toaster's color processing module, Chroma/FX, can perform real-time alterations

Video Toaster special effects and transitions are popular in TV sports production.

of the brightness, contrast and saturation of any video source. "The Toaster is great in that it is a real-time video device," says Matthew Schlanger, an instructor at New York City's School of the Visual Arts. Schlanger's students often use the Toaster in combination with other tools such as an Echolab DV5 (a high-end chroma keyer). One of their favorite techniques is to run footage through the Toaster using one of the Chroma/FX tools, lay it on tape, and then run the footage back through the Toaster a second or third time using different tools. "You end up with a very layered piece of work," says Schlanger. "By combining these devices, our studio becomes very powerful."

Todd Rundgren's Playground

Todd Rundgren, musician, record producer and artist, was an early adopter of the Video Toaster. His company, NuTopia Inc. of Sausailto, California, uses Toaster Paint, the program's 24-bit, 16.8 million-color paint module, to perform image processing for still-frame art and animation. Due to a limitation of the Amiga platform, Toaster Paint images are edited in a 4,096-color preview mode and only subsequently rendered in up to 16.8 million colors into one of the Toaster's two frame buffers.

"We use Photoshop quite extensively on the Mac, and we do a lot of taking images back and forth between the Toaster and the Macintosh," Rundgren says. Utopia Grokware, the software development arm of NuTopia, was responsible for much of the development of NewTek's Toaster Link, which allows a Mac to serve as a Toaster front-end.

NewTek's Montgomery (left) and founder Jenison.

At NuTopia, Rundgren and his staff render LightWave animation frames on 12 Video Toasters networked using Oxxi's Amiga Client Software for Novell networks. Each Toaster is configured with a 68040 and 32 MB of 32-bit RAM, but since they're connected to a large 80486-based file server, they don't need their own hard drives. Rundgren says his company has developed its own network management software that "essentially tells all the machines what to do and keeps track of their progress." This network enables Rundgren to render 12 frames of animation simultaneously and store all the rendered images on the server.

Rundgren used the Video Toaster extensively last year in the production of his music video *Change Myself*. "It was a watershed for me because I had always wanted to do a fully computer-animated video, but until the Toaster came along, I couldn't fit it in my budget," he says. "I guess it was also a watershed in that it was done entirely in a desktop environment. No one had done four minutes of computer-animated video on that type of system."

In Rundgren's opinion, the Toaster's reliance on the Amiga as a platform has been one of its biggest flaws. "There are a lot of things you can't do with the interface because the Amiga only displays so many colors, and the pixels aren't square, and things like that."

Toasting the American Music Awards

Since the introduction of version 2.0, more and more professional animators and artists are making the Toaster one of the tools of their trade.

Bobby Gautieri, president of G-Man Productions, used the Toaster extensively as graphics producer for the 20th Annual American Music Awards. "Since we're the first show of the year, we try to set the pace for the rest of the award shows," Gautieri says. "Last year, it was morphing. This year, it's the Toaster."

NewTek: Flying High in Kansas

The industry hasn't seen a company like NewTek since the early days of Apple. There is an important difference, however. The Topeka, Kansas-based company has so far survived its growth without taking on the baggage of venture capitalists or outside investors. The vision remains with the privately held company's founder, Tim Jenison, and one of its earliest officers, Paul Montgomery.

NewTek's Donetta Colboch, director of marketing, is tight-lipped about operations, refusing even to divulge the number of Toasters that have been sold to date, other than to say, "lots." No kidding. Estimates among industry analysits for the Toaster's installed base range from 20,000 to 100,000 units and Newtek has the air of a company running well into the black. Two of NewTek's company cars are hand-built Acura NSXs, and employees fly to trade shows in the company's corporate jet. Despite these extravagances, research and development is the top priority. "This is Tim's company, and R&D is his love," Colboch says. "The money that was made from Digi-View and Digi-Paint [two early NewTek packages for the Amiga] funded the R&D for the Toaster. That's why the company has no debt or outside investors."

Colboch dropped a few hints about where the Toaster technology was headed: "The next thing will be an upgrade for LightWave 3D," and NewTek has plans to "put everything that you need to produce broadcast-quality video in the same box." Version 3.0 is due out soon, and there are also plans for Macintosh and Windows versions.

Even by Silicon Valley standards, the NewTek crowd might be described as "offbeat," and they're the talk of the town in Topeka. A favorite pastime among NewTek employees is skating down city streets with wind machines strapped to their backs. City officials became so concerned that they passed an ordinance banning roller skating on city streets. To date, however, no one has gotten a ticket, even though Jenison offered a bonus to the first employee to be cited. A company spokesperson, tongue in cheek, says it was all part of NewTek's "Terrorize Topeka" campaign.—*M.B*

Third-Party Tools Help Cure Toaster Limits

NewTek likes to pitch the Toaster as a "studio-in-a-box," but the Toaster actually has several gaps and limitations. Most can be overcome with third-party add-ons, but some cannot. The most serious drawback is that the video output is NTSC composite only (the European PAL standard is not supported) and can only be upgraded to Y/C (used by S-VHS and Hi8 systems). Secondly, the Toaster cannot create real-time animation. Each animation frame must be individually rendered and either recorded using a single-frame controller and a videotape recorder capable of single-frame recording (or a digital disk recorder), or saved, frame by frame, to a disk drive. Lastly, there are compatibility problems with later Amiga models. The fact that the Toaster card does not fit in the Amiga 3000 slot (Commodore redesigned the bus) can be overcome with products like the Toaster Cozzy and Toaster Oven (see below), but nothing can be done about the fact that the Toaster does not function at all in the newest Amiga model, the A4000—Commodore redesigned the Amiga's graphics coprocessors.

The rest of the Toaster's limitations can be overcome with the products listed below.

TIME-BASE CORRECTORS

TBCs stabilize the output of a VTR before it is processed through the Toaster. One TBC is *required* for each source VTR. Some TBCs come in cases, but only internal add-in cards are listed here.

KitchenSync - Dual-channel TBC corrects time-base errors from two VTRs simultaneously. $1,895; Y/C in/out, $129.

Digital Creations, (916) 344-4825.
Reader Service No. 721

Micro 4:2:2 - Single-channel TBC offering internal 4:2:2 component video-signal processing. Supports Y/C input and output. $1,095; remote control, $300.

FERAL Industries, (913) 831-0188.
Reader Service No. 722

NovaMate - Single-channel TBC supports Y/C input and output. Remote control operates up to 99 cards. $1,300; remote control $350.

Nova Systems, (203) 693-0238.
Reader Service No. 723

Personal TBC-III - Features Y/C (S-Video) in, but not out. Amiga software provided for controlling settings. $995; remote control $299.

Digital Processing Systems Inc., (416) 754-8090.
Reader Service No. 724

TBCard - Single-channel TBC supports Y/C input, but not output. $995; remote control $195.

I.DEN Videotronics Corp., (800) 874-4336.
Reader Service No. 725

TBC/PCB - Single-channel TBC supports Y/C input and output. Amiga software provided for controlling settings. $1,050; remote control $290.

Prime Image Inc., (408) 867-6519.
Reader Service No. 726

A/B ROLL VIDEO EDITING SYSTEMS

Amiga-based video editing systems were covered in last month's Amiga buyers guide. The products listed here run on other platforms, but control the Video Toaster Workstation through its serial port.

AmiLink - RGB Computer & Video sells several models of this Windows-based A/B roll board. AmiLink/CI3-VP with Toaster option ($2,090) is designed for use with Panasonic AG-1960 S-VHS VCRs. Imports and exports CMX 3600 ASCII edit lists. Options include a special V-LAN version (variably priced) that uses Videomedia V-Lan technology to control Panasonic AG-1960 and Sony VISCA decks; support for control track and RC time-code editing (variably priced); and a $200 CXTC option that adds VITC time-code reader/generation. The AmiLink AL3N-T with Toaster option ($5,610) is designed to work with serial-controlled VTRs (parallel also supported) and includes V-Lan IMC (Inboard Machine Control). The AL3N-T imports and exports CMX 3600 ASCII edit lists. Interfaces to other professional switchers and audio mixers available ($1,115 each). The AmiLink AL3N-POD with Toaster option ($6,490) is an AL3N-T that includes RGB's POD Jog/Shuttle wheel keyboard.

RGB Computer & Video, (407) 844-3348.
Reader Service No. 727

Editorizer - This Windows-based system works with serial-controlled VTRs (parallel also available), and it imports and exports CMX-compatible edit decision lists. $2,495.

Technical Aesthetics Operations, (314) 364-4925.
Reader Service No. 728

OZ Video Editing System - This Windows-based system is designed for use with serial-controlled VTRs (parallel and prosumer also available). $3,995.

Videomedia Inc., (408) 227-9977.
Reader Service No. 729

Sundance System Q-Cut A/B Roll - This Macintosh-based system is designed for serial-controlled VTRs. Includes Multi-Machine Interface for controlling up to 15 VTRs and creates CMX-compatible edit decision lists. $3,995.

Sundance Technology Group, (214) 869-1002.
Reader Service No. 730

SuperMICRON - This stand-alone device works with serial-controlled VTRs. Includes an audio mixer controller. $6,500.

Videomedia Inc., (408) 227-9977.
Reader Service No. 731

ANIMATION CONTROLLERS

Animation controllers (also called single-frame controllers) are required to record LightWave 3D animations to tape or to a digital disk recorder. Each time the Toaster renders a frame of animation to its frame buffer, it signals the controller to trigger the recording device to record the Toaster's video output for a fraction of a second. The process repeats itself for each frame.

Animax - A hardware controller card, based on Videomedia's V-LAN network technology. Supports serial-controlled recording devices only. Can also be used as an edit controller. Also works with IBM PCs. $1,250.

Videomedia Inc., (408) 227-9977.
Reader Service No. 732

BCD-2000A - A hardware controller card that supports serial and parallel recorders. $995.

BCD Associates Inc., (405) 843-4574.
Reader Service No. 733.

LightWave 3D animations shown at the American Music Awards

DQ-TACO - A hardware controller card that supports serial-controlled recorders only. Also works with IBM PCs. $2,195.
Diaquest Inc., (510) 526-7167.
Reader Service No. 734

Personal Single Frame Controller - A software controller for VTRs and digital disk recorders that works via the serial port. Supports serial recorders only. $425.
Nucleus Electronics, (416) 859-5218.
Reader Service No. 735

MISCELLANEOUS

Amiga Client Software - Enables Toaster Workstations to function as clients on a Novell Netware network. Requires IBM PC-compatible server, NetWare, Ethernet cards. $199 for one user, $499 for 5 users.
Oxxi Inc., (310) 427-1227.
Reader Service No. 736

Art Department Professional - Converts Toaster animation frames into Abekas film recorder format. Driver module saves files in digital form to an Exabyte tape drive for file transfer. $299; Exabyte Module $200.
ASDG Inc., (608) 273-6585.
Reader Service No. 737

BreadBoard - Video delay buffer board resolves the issue of the Toaster's 400-nanosecond delay between video input and output. Enables Toaster to be used with high-end switchers and character generators. $398.
Barclay Research Group Inc., (800) 356-8863.
Reader Service No. 738

ENLAN-DFS - Enables Toaster Workstations to be networked in a peer-to-peer Ethernet LAN. Requires Ethernet cards for each node. $349 for five users.
Interworks, (909) 699-8120.
Reader Service No. 739

InterChange Plus - File conversion utility translates files between the Toaster and other 3D modeling packages on the Amiga, IBM PC and Macintosh. Optional modules available for file conversions to and from WaveFront and other platforms. $99.95.
Syndesis Corp., (608) 455-1422.
Reader Service No. 740

MegAChip 2000 - Doubles Toaster Workstation's specialized CHIP memory to 2 MB. $349.95.
DKB Software, (313) 960-8751.
Reader Service No. 741

Toaster Cozzy - Video Toaster board installed in an external chassis that can be connected to an Amiga 3000 computer. $3,280.
Heifner Communications Inc., (314) 445-6163.
Reader Service No. 742

Video Toaster, Video Toaster Workstation, Toaster Link - The Toaster is an Amiga add-in board (plus video production software) and the Workstation is an Amiga with the board and software installed. The Link enables any color Macintosh to be used as a front-end to the Toaster and permits SCSI file transfers between the Mac and the Toaster. $2,495 (Toaster); $4,595 (Workstation); $595 (Link).
NewTek Inc., (800) 843-8934.
Reader Service No. 743

Toaster Oven - Tower case for the Amiga 3000 motherboard plus an additional IBM PC expansion bus. Room in case for a Toaster board, six 5.25-inch disk drives and four 3.5-inch drives. $629.95.
Ambitious Technologies, (310) 532-0787.
Reader Service No. 744

Y/C Plus - Upgrades the Toaster's video I/O to Y/C for use with S-VHS and Hi8 video equipment. $949.
Smith Audio Visual, (913) 235-3481.
Reader Service No. 745

Jennifer McKnew, an artist who works out of The Post Group, a Hollywood-based video post-production house, used the Toaster and LightWave 3D to create most of the graphics for the show, including the stunning background sets of animated musical instruments that introduced the retrospective of the last 20 years of American music. McKnew had used the Toaster to produce videographics and animations for *Unsolved Mysteries*, *Quantum Leap*, and the Disney Channel's *Discover Magazine*.

Gautieri was skeptical at first. "I had heard about the Toaster," he says, "but I blew it off because I didn't think it could compete with the Wavefront. Then Jennifer showed me what she had been working on and I was blown away."

McKnew recalls that "I told them, 'Just let me build one photorealistic instrument. Give me one day.' I sat down at the Toaster and built a violin, and they came in and said, 'Oh my God!' Once they had seen that, there was no going back."

McKnew used four Toasters, each with a 68040, 32 MB of 32-bit RAM, and either a 400- or 600-MB hard drive. The Toaster's output to tape is NTSC composite, which is limited to about 320 lines of resolution in the first generation and less with each subsequent generation. McKnew, however, is able to keep graphics output in the digital realm (and thus immune from resolution loss) by using ASDG's Art Department Professional (AdPro), image processing utility. "AdPro can load Toaster frames as RGB files and write them out in Abekas file format to an Exabyte digital tape drive connected to the Toaster's SCSI port," she says. "I can store 5 gigabytes of animation files on a single 8mm tape. From there, we load the tape into the Exabyte drive hooked up to our Abekas A60 Digital Disk Recorder. From the Abekas, we go out to D1 [a high-end digital videotape format] and the sequence stays digital with D1 resolution of 720 by 486."

After completing work on two more episodes of *Unsolved Mysteries*, McKnew will be using her Toaster in her work as an artist for Steven Spielberg's new *Seaquest* television series.

Meanwhile, Gautieri is a believer. Above all, it's a matter of cost. "This thing blows the Wavefront out of the water because it gives you sophisticated animation without the budget," Gautieri says. "When you look at how much animation costs per second, and what the Toaster can do, you'd be crazy not to use it." **M**

Michael Brown is a writer and producer who lives in Newark, California.

Media Catalogers

Multimedia Databases: Image Is Everything

By Michael Brown and Lee Sherman

The glut of multimedia presentation and authoring systems out there has finally begotten a supporting cadre of database utilities for organizing those massive assemblages of images, sound effects, music sound tracks, MIDI scores, and video clips essential to every great production.

The Macintosh and Windows database packages we examine here meet a variety of needs. What they have in common is support for cataloging all types of media, including graphics, animation, music and video, in a visual manner. All the Macintosh packages support thumbnail viewing of images and QuickTime files; this feature is harder to find on the Windows platform, although all the packages let you access the original files in some manner. Many let you launch the creating application directly from the database. Some of the packages also have powerful network support features, letting workgroups share large media libraries.

ImagePals was tops on the Windows platform when it came to managing files using thumbnails.

WINDOWS

ImagePals

ImagePals 1.2, $249, from U-Lead Systems, is a bundle of three image-related applications: Enhancer, Capture and Album. Enhancer is an image-processing program and Capture performs screen grabs. We'll focus on Album, the multimedia database.

ImagePals is the only Windows package we reviewed that supports thumbnail images of images and videos. The program creates thumbnails for image files automatically; for animations and video clips you'll have to use the Capture module first to copy a frame to the clipboard and then to paste into the thumbnail, a cumbersome process. Aside from this annoyance, ImagePals is an excellent multimedia database.

Files are tracked and managed in "albums." Here again, ImagePals was the only package capable of going out and collecting files automatically from a specified path. If all the files in a path have an appropriate file extension (.PCX for Paintbrush files, for example) ImagePals can be instructed to collect information on only those types of files. It will automatically create a thumbnail image for each file that matches the criterion and place the thumbnail in the album. ImagePals uses the same logic to build albums by displaying the appropriate files in a dialog box and allowing you to select the desired files one a time. Finally, ImagePals supports drag-and-drop collection and album creation using the Windows File Manager.

Several thumbnail sizes can be created. Each thumbnail carries the name of the file it represents, the size of the entire image (in pixels), the size of the file (in bytes), the date the file was created, the file data type (vector, bitmap and so on), the resolution (pixels per inch) and a brief description of the image.

Once you have created a library of Albums, you can search for particular files or file types with ImagePals' robust search utility. Searches can be conducted on a single album or on all albums in the database. The search criteria include File Name (with support for wild cards), Description, File Size (you can specify a range of sizes), Data Type (any or all) and File Date. You can also define combinations of search criteria. Upon completion of the search, ImagePals opens a new window listing all the files that match the search criteria. Click on the file name and the program automatically opens the album containing that thumbnail.

ImagePals is one of only two Windows programs reviewed here that support network applications right out of the box. The other was Superbase. Media Organizer and MpcOrganizer offer network support as an option. If a user is accessing an ImagePals album located on a server, the program will not allow another user to access that album until the first user is finished with it. If the album is designated "read-only," however, multiple users can simultaneously access the same album over a network.

ImagePals supports an impressive number of graphics file formats and will compress and decompress graphics files using the JPEG algorithm. Its support of animation files is weak; only Video for Windows (AVI) and Macromedia Director (MMM) files can be cataloged. ImagePals supports the two most popular Windows audio formats: MIDI, used by MIDI instruments, and WAVE, used by PC sound cards.

ImagePals can function as an OLE server. In an OLE environment, objects such as animations, video clips and audio segments created by one application can be linked or embedded to another. The application that creates the original object is known as the server. The application to which the object is linked or embedded is known as the client. If the object is linked, then the object does not need to be duplicated in order to appear in the client. Since there is only one file, any changes made to the object by the server are automatically reflected in the client. The client, however, is unable to change a linked object. If the object is embedded in the client, on the other hand, the object is duplicated. Changes made to the object by the server are not reflected in the client, but the client is able to make changes to the object without affecting the original. The client, however, remains dependent on the server to play back the object.

A presentation program functioning as an OLE client, for example, could use ImagePals to play back video that has been linked to or embedded in its documents.

If your file management needs revolve primarily around images, ImagePals is the best of the Windows crop. It has the best tools, by far, for cataloging files. Its image capture and image processing modules are a nice side benefit.

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Support for video and animation, however, was much less robust.

MpcOrganizer

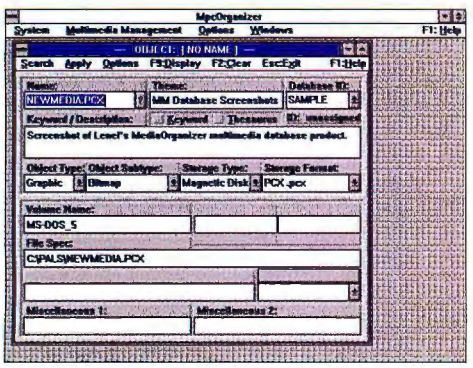
MpcOrganizer, $295 from Lenel Systems, takes its name from the Multimedia Personal Computer standard established by Microsoft. MpcOrganizer, and its sibling, MediaOrganizer, use Borland's Paradox database engine. Lenel is also working on MediaDeveloper Pro (see "Coming Attractions," page 65). Database files created with one product in the series can be shared with any other product in the series.

The lack of thumbnail support is one of a few unfortunate flaws in an otherwise excellent package. A handy utility for displaying graphics doesn't diminish the fact that MpcOrganizer would be much better if its interface were more graphical. The quality of its support for animation and video, however, was exceeded only by MediaOrganizer on the Windows platform. The two Lenel packages were the only ones that supported files created with popular animation programs from Autodesk, Macromedia and Gold Disk. The program also supports Video for Windows. In addition, MpcOrganizer can catalog information not stored in the computer, such as books, articles and artifacts.

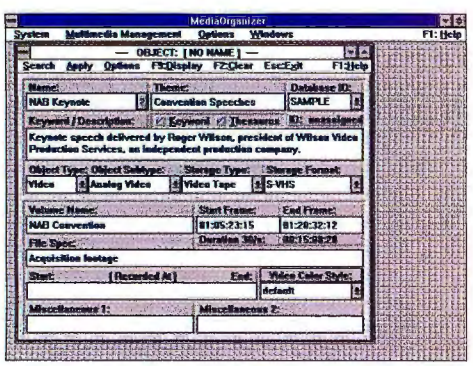
MpcOrganizer supports drag-and-drop cataloging under the Windows File Manager. Drag a file or folder onto the Object window and the program automatically copies the file name and identifies the file's type (animation, audio, document, graphic, reference or unidentified), file sub-type (bitmap, digital audio, book), storage type (magnetic disk, CD-ROM, Photo CD), and storage format (Windows Metafile, Encapsulated PostScript, and so on.). The Object window also displays the volume name and the complete path where the file is stored.

A freeform keyword field provides descriptive information about the object that can be used when conducting database searches. A thesaurus feature can even be used to locate entries that contain synonyms of the word in your search criteria. Two miscellaneous fields are provided for attaching up to 72 additional characters of notes to each entry in the database. Groups of objects with common characteristics can be gathered into collections, collections with common character characteristics can then be gathered into super-collections.

The list of file formats supported by MpcOrganizer is almost as comprehensive as that of ImagePals, with the notable exception of JPEG images. MpcOrganizer supports MIDI and Wave audio files. And, like ImagePals, MpcOrganizer can function as an OLE server, a major feature.



MpcOrganizer is very similar to its higher-end sibling, but lacks support for non-digital data.



MediaOrganizer is the only Windows program to support cataloging using analog equipment such as VCRs.

MediaOrganizer

MediaOrganizer, $495, also from Lenel Systems, builds on the foundation laid by MpcOrganizer by adding support for different devices and increasing the number and types of data formats supported. Unfortunately, it uses the same uninspiring user interface.

MediaOrganizer supports the same graphics file formats as MpcOrganizer, but it has several unique aspects. First, it supports video capture boards, such as the Matrox Illuminator and the Truevision Bravado, in addition to video graphics boards. The program uses the computer's video graphics board to display image files that have been cataloged as graphic objects, but it uses any available video board to display objects that have been cataloged as still video objects.

Second, it can be used to catalog analog audio and video segments and digital audio segments that are stored outside the computer. This includes videotapes, laserdiscs and audio CDs. Such segments are cataloged by selecting the beginning and ending points of the desired segment as the material is played under computer control. Audio CDs can be played using a CD-ROM drive. Video segments must be played on a device that can be interfaced to the computer, such as Sony's Vbox, or a videotape recorder or laserdisc player with a serial port.

Third, MediaOrganizer was the only package to support Intel's AVS file format for digital video (used by DVI products as IBM's ActionMedia II board). Lenel promises that the next version will also feature AVS support.

Given its support for audio/video material outside the realm of the computer, MediaOrganizer is a natural choice for cataloging tape libraries. Those with hardcore image-cataloging needs, on the other hand, are still left without support for JPEG file formats. Like MpcOrganizer, MediaOrganizer can function as an OLE server.

Instant Database

Instant Database, $95, is one of two multimedia-capable databases we reviewed that require the user to build the database from the ground up by defining all the data entry and display fields. Instant Database was developed using Asymetrix's Toolbook development environment, so you'll need Toolbook to customize Instant Database. Some Instant Database templates that you can modify according to your needs are provided, but chances are you

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Instant Database supports few file formats, but it covers popular types, such as Video for Windows.

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won't be instantly productive with this package. However, if your database needs are fairly simple, Instant Database is a cost-effective solution.

The advantage of "start-from-scratch" databases is that you can customize them. Instant Database, for example, allows you to place static graphics around the data entry and display fields in the database. This can be very useful if you're creating a database that others will use on occasion.

While Instant Database does not support thumbnails, you can configure it to call up the image or video as soon as the record is accessed. You may consider this a worthwhile alternative to the on-demand method used by Lenel's Organizer series.

Instant Database doesn't automatically collect files like ImagePals, and it doesn't support drag-and-drop editing like the Organizer packages, so preparing database entries is a cumbersome process. A file requester simplifies the process of picking records, but none of the important information associated with a file—its name, size, type and so on—is displayed in the database. The program keeps track of where the files are located, so that it can display them on demand, but any other information must be added manually. There is also no way to add batches of files to the database at one time, a severe handicap.

Database search capabilities are very limited. Searches for a single text string can be conducted on either a single text field or on all the text in the database. There is no provision for searching for particular types of data files.

Instant Database supports few file formats. Only the most common graphics formats can be cataloged. Support for animation files, on the other hand, is actually better than that of ImagePals, including Autodesk animation files as well as Video for Windows. Audio support is typical: MIDI and Wave files. Multimedia presentations created with Asymetrix's MediaBlitz package can also be imported into the database program. This is the only Windows package we reviewed that doesn't have some type of support for OLE, and there is no support for using the program on a network.

Superbase

Superbase 2.0 for Windows, $795 from Software Publishing Corp., is a comprehensive Windows database system that features its own programming language, sophisticated support for local area networks, eight manuals and so on. It is really a standard, full-featured database with the capability of handling multimedia data as well. Superbase doesn't come with a ready-made multimedia database template, however, and you will have to design your own. If this prospect doesn't faze you, then it can be the best choice for building custom applications.

While our feature chart indicates that Superbase supports thumbnails, further explanation is required. The program can create thumbnails by mapping bitmaps onto button objects. This process, however, isn't nearly as automated as it would be using a program like ImagePals.

As with Instant Database, each file and the statistics associated with it must be collected one by one. However, you could write a program within Superbase resembling the automated process found in ImagePals, or the drag-and-drop capability found in the Organizer packages. Not surprisingly, Superbase features the most comprehensive search capabilities of any of these packages, with a full-featured implementation of "query by example." Query by example describes a process whereby the user can ask questions about the data contained in the database, rather than being forced to work with a rigid set of rules. Since each query can be saved, it need be defined only once. These are powerful features, but they may require you to master a new set of skills before you become productive with them.

Superbase's support for graphics file formats was surprisingly limited, with support for only two more packages than the far less expensive Instant Database. As with Instant Database, Superbase provides the ability to incorporate graphic elements into the data entry screens themselves. Video and animation support is adequate, with support for Video for Windows and animation packages from Autodesk and Macromedia. Audio support is limited to MIDI and Wave files. Superbase can link and embed other types of graphics by functioning as an OLE client, but it does not function as a server.

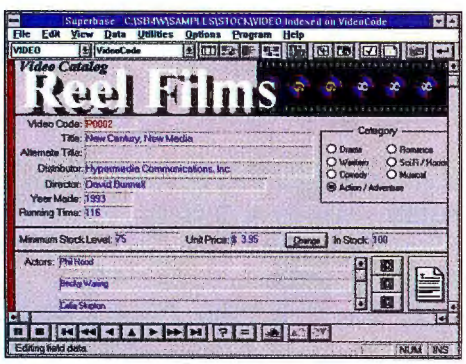
Of the Windows multimedia databases covered here, Superbase holds the most potential because of its rich feature set. The question you need to resolve as a user is, do you have the time to learn how to build your own ultimate database? Or would you be satisfied with something a little less potent, but ready to go?

MACINTOSH

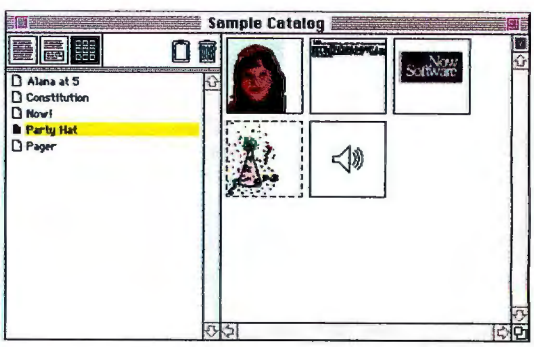
Now Scrapbook

Now Scrapbook, $149, ships as part of the Now Utilities collection from Now Software. Now Scrapbook is an update to the original Apple concept with a simplicity that will appeal to those whose media management needs aren't too taxing.

Unlike the original, the new version of Now Scrapbook lets you maintain multiple open catalogs simultaneously and move easily between them. Icons across the top of the main window let you switch from a view that lists the items along one side with the full graphic on the other, to an info view with file type, creation date and size, or a thumbnail view. Now Scrapbook has extensive drag-and-drop capability. You can rearrange items in the list by dragging, rearrange thumbnails, delete items by dragging them to a miniature trash icon and copy them to the clipboard by dragging to an icon of a clipboard. Items can be sorted in forward or reverse alphabetical order, and by date, size or type. The real surprise here is the inclusion of a mini-editor that lets you crop and resize



Superbase was the most sophisticated database we reviewed, but it requires initial programming.



Now Scrapbook, seen here in thumbnail view, builds on the streamlined interface of Apple's original.

Coming Attractions

Several multimedia databases under development for Mac and Windows were not quite shipping at the time of this review, but show great promise.

On the Windows side, Lenel Systems' MediaDeveloper Pro promises to extend control over an even greater number of devices and sources of multimedia material, including film libraries, than does MediaOrganizer. Price and estimated ship date have not yet been announced.

VideoBase, from Videomail Inc., will feature integrated audio/video capture and playback capabilities. It will support full-motion video boards, image scanners, fax modems, VCRs and video cameras. The program will also support JPEG image compression and multiple-image, video and audio clips for each database entry.

On the Mac, Multi-Ad Search version 2.0, expected this spring, will add many more file types to the program's original image orientation. Multi-Ad Search is based on the same search engine as Aldus Fetch, and the update will be built on top of a more recent version of the engine that Multi-Ad Services claims will give the program superior speed.

Although many packages support the Photo CD format, Kodak will be offering its own solution, called Shoebox, for managing these files on either a Macintosh or a PC running Windows 3.1. In addition to producing thumbnail catalogs from Photo CD discs, Shoebox will support other image and audio files found on those platforms. Images can be accessed in five different resolutions, from thumbnails to photographic-quality enlargements. Because it uses a contact-sheet metaphor familiar to photographers, and it includes the ability to crop and resize images, Shoebox will appeal to stock photo agencies, museums and publishers who work primarily with images.

Finally, DeltaPoint will be introducing FreezeFrame for the Macintosh in the first half of the year. In addition to file-conversion and screen-capture utilities, the program will provide a thumbnail library for cataloging graphics, text, sound and QuickTime files. Keyword searching and the ability to preview an item by double-clicking on it are expected to be highlights of the program. Like Kudo Image Browser, the program supports the dragging and dropping of thumbnails into other applications. It will ship with a library of clip art.

DeltaPoint Inc.
(408) 648-4000
Reader Service No. 558

Eastman Kodak Co.
(800) 242-2424
Reader Service No. 562

Lenel Systems International
(716) 248-9720
Reader Service No. 563

Multi-Ad Services
(309) 692-1530
Reader Service No. 564

Videomail Inc.
(408) 747-0223
Reader Service No. 569

graphics and change the characteristics of a block of text while these items are still on the clipboard.

Scrapbook utilities are great for individual users who don't have too many files to keep track of but they differ from full-fledged media catalogers in one very important way. Instead of storing references to the files, they store the files themselves. This means all your media need to be stored on a single volume, an unworkable situation unless you've got a gigabyte or more of storage. Nor can they be accessed over a network, so you're out of luck if you are part of a team.

A variety of other Macintosh media catalogers have appeared that address these concerns. All of them allow you to view thumbnails, create catalogs and perform flexible searches and sorts. They only store pointers to the original files so you can archive your data on removable media or networked volumes. Their designers take advantage of System 7 features such as aliasing, Apple events and QuickTime to deliver applications specifically designed for the complexities of digital media. The results differ primarily in degree of network support, file types that can be cataloged and user interface.

Fetch

Aldus Corp.'s Fetch ($295) goes far beyond the simple browsing capabilities found in earlier Mac image catalogers to deliver capabilities for cataloging, searching and previewing that rival those found in the most complex databases. Despite its underlying power, Fetch presents a straightforward interface that makes it a pleasure to use.

Fetch uses a proprietary search engine to rapidly scan thousands of files using any combina-

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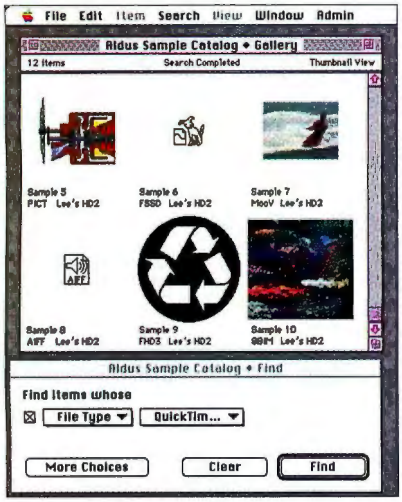

Fetch's Find command lets you call up files based on criteria such as type and creator. Here we search for QuickTime movies.

tion of keywords, filenames, file types and locations. Fetch's Find command is comprehensive, letting you search on multiple criteria. Once you've defined a search, it can be saved and later recalled from a menu. Fetch's speed lives up to its billing.

Adding keywords to your cataloged items can increase the effectiveness of a search tremendously. Fortunately Fetch's approach to doing so is both easy and flexible. Each item can have an unlimited number of keywords and you can even add a set of keywords to multiple items at the same time.

Fetch is designed to appeal to both sides of the human brain; it can display your files as either thumbnails for visual selection or in a list format that provides more textual information. You can preview images, hear sounds and play movies directly within Fetch or you can set up links between file types and applications so that you can automatically open the proper application to edit the file. A Pasteboard window allows you to store items temporarily that will later be moved into another document or catalog.

For those running System 7, the program's drag-and-drop cataloging feature lets you create catalogs by dragging the icons of documents you want to catalog onto the Fetch icon. Files from multiple volumes can be cataloged easily in this way. System 6 users must use the Add/Update command from within Fetch.

The program's support for a variety of file types (with a provision to add more) is commendable. Aldus has been evangelizing to third parties to support direct links to their applications, which makes it more useful than those programs that just support the standard Macintosh file types. Fetch can catalog (and subsequently search for) Adobe Photoshop, Aldus FreeHand, Aldus Persuasion and Multi-Ad Creator documents without requiring external translators. The program's support for the Kodak Photo CD format is extensive, allowing the user to display an image at a variety of available resolutions with a convenient pull-down menu in the preview window and rotate or flip the image if desired. Aldus is also making a Browser-only version available that is expected to be included on CD-ROM-based clip-media collections. These efforts give Fetch a real shot

MULTIMEDIA DATABASES

	CompassPoint	Cumulus	Fetch	ImagePals 1.2	Instant Database 2.0	Kudo Image Browser	MacPresents
Vendor	Northpoint Software	Canto Software	Aldus Corp.	U-Lead Systems	Asymetrix Corp.	Imspace Systems Corp.	Educational Multimedia Concepts Ltd.
Phone	(313) 543-1770	(415) 861-6827	(206) 622-5500	(310) 523-9393	(206) 462-0501	(619) 272-2600	(612) 379-3842
Reader Service	565	557	555	568	556	560	559
File formats:							
Graphic	TIFF, PICT, EPS, MacPaint, JPEG, PCX	PICT, MacPaint, TIFF, Photo CD, Photoshop, EPS	EPS, JPEG, Photo CD, PICT, RIFF, TIFF, Pagemaker, Photoshop, Freehand, Persuasion, AIFF, SoundEdit, MacPaint, Multi-Ad Creator PICS, QuickTime	BMP, CGM, CLP, CUR, DFX, EPS, GIF, ICO, IMG, JPEG, MAC, MSP, PCD, PICT, PCX, PIC, RAS, RLE, TGA, TIFF, WMF, WPG	BMP, CGM, TIFF, EPS, WMF, CPF, SCF	PICT, TIFF, EPS, Photoshop, PhotoCD, GIF, BMP, PCX	PICT
Animation/video	QuickTime	QuickTime, PICS	QuickTime, PICS	AVI, MMM	AVI, AAS, FLC, FLI	QuickTime	QuickTime, Macromedia Director
Audio			AIFF, snd, SoundEdit	MIDI, WAVE	MIDI, WAVE		
Features:							
Drag & drop			•	•		•	•
Batch additions	•	•	•	•	•	•	•
Thumbnail view	•	•	•	•[1]		•	
Keyword search	•	•	•	•	•	•	•
Sort on criteria	•	•	•	•	•	•	
Max. files/catalog	50,000	10,000-50,000	32,000	400,000	64,000	32,000	Limited by RAM
Custom reports	•	•	•		•	•	•
Network support	•	•	•	•		•	
OLE support	NA	NA	NA	Server	No	NA	NA
Access security	•	•	•			•	•

[1] While ImagePals was the only Windows package to support thumbnail representations of image files, all the packages were able to display the files themselves.

at becoming the standard in Mac cataloging software.

Increasingly, sounds, movies and graphics are being kept on central file servers where they can be accessed by the different members of a workgroup. The network features in Fetch are well thought out. Multiple users can be allowed access to a catalog. To save time when sending large files over a local area network, you can choose to send pointers to files instead of the files themselves. You can even store files "off-line" on removable cartridges and CD-ROMs. Fetch will ask for the needed volume by name. If the file resides on a network volume, Fetch will automatically mount it and prompt for the required password. Security features allow you to limit access to your clip libraries.

Kudo Image Browser

The ability to locate files rapidly no matter where they physically reside is important, but flexibility in letting you work with those files once you've found them can turn a standard cataloger into a truly powerful tool. Kudo Image Browser ($295), from Imspace Systems, distinguishes itself by allowing you to place items directly into an Aldus PageMaker, QuarkXPress or Microsoft Word file by dragging and dropping its thumbnail directly from the Browser. Another unique feature is the ability to shuttle through the files in a catalog with a riffle feature that is similar to the fast-forward control on a VCR. Visually oriented individuals will appreciate the ability to let the images fly by (the rate is adjustable) until an appropriate one comes into view.

Its simple interface has just two views; a gallery view, which displays thumbnails, and a list view, which provides information about the file's name, size, creation date, modification date and location. You can add descriptive comments in the notes field but there is no provision for adding keywords. The information provided is less extensive than that found in most of the other programs

Media Cataloger	MediaOrganizer 1.1a	MpcOrganizer 1.1a	Now Utilities Scrapbook	SuperBase 2.0
Interactive Media Corp.	Lenel Systems International	Lenel Systems International	Now Software Inc.	Software Publishing Corp.
(415) 948-0745	(716) 248-9720	(716) 248-9720	(503) 274-2800	(408) 988-7518
561	563	563	566	567
PICT, TIFF, EPS, MacPaint	ART, BMP, CGM, CUR, DFX, DRW, EPS, GIF, GRF, ICO, HGL, IMG, MTX, PCD, PCX, PIC, RLE, TGA, TIFF, WMF, WPG	ART, BMP, CGM, CUR, DFX, DRW, EPS, GIF, GRF, ICO, HGL, IMG, MTX, PCD, PCX, PIC, RLE, TGA, TIFF, WMF, WPG	PICT, TIFF, EPS, MacPaint	BMP, EPS, GIF, IMG, PCX, TGA, TIFF, WMF
QuickTime	AVI, AVS, AWM, FLC, FLI, MMM, analog video	AVI, AWM, FLC, FLI, MMM	QuickTime	AVI, FLC, FLI, MMM
snd	MIDI, WAVE, CD-audio, analog audio	MIDI, WAVE, CD-audio	snd	MIDI, WAVE
	•	•		•
•	•	•	•	User-programmable
•			•	
•	•	•	•	•
•	•	•	•	•
32,000	4 billion	4 billion	Limited by RAM	1 billion
	Limited	Limited		•
	Optional	Optional		•
NA	Server	Server	NA	Client
				•

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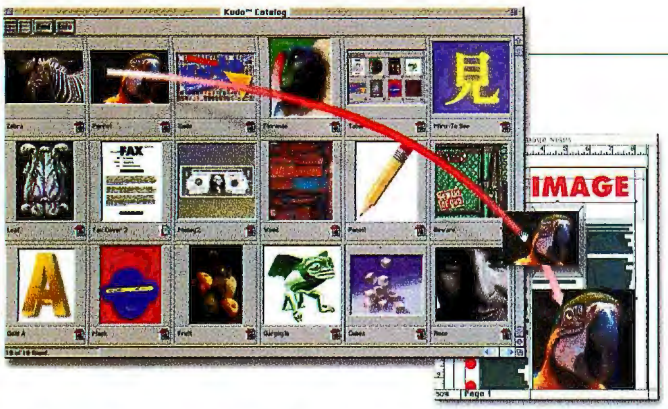


Kudo Image Browser is the only Mac program to support drag and drop of images into QuarkXPress and PageMaker, making it a natural for desktop publishing.

discussed here. Since Kudo doesn't tell you when an item was cataloged or by whom, it may not be suitable for workgroups.

Kudo Image Browser is easier to grasp than Fetch. It has a more logically arranged menu structure that will have newcomers to database management up and running in no time, but it lacks the sophistication of Aldus' program. You can catalog QuickTime movies but they can't be played back within the program (Kudo displays the poster instead).

Despite its apparent simplicity, Kudo Image Browser includes many slick features. It is superbly integrated with other applications. For example, the Reveal function links to the Finder, which then displays the file requested. Like Fetch, Kudo Image Browser supports drag-and-drop cataloging under System 7, so it's easy to keep your catalogs updated. Imspace Systems has paid close attention to detail, including niceties like a resize box that properly restricts resizing so that you don't end up with only part of a thumbnail showing. The program's support for the Claris XTND system allows it to support a wide variety of file formats and leaves room for future growth.

CompassPoint

Northpoint Software's CompassPoint image-management system ($749) is an appropriate choice if you require cross-platform compatibility since the Macintosh and Windows versions are nearly identical in both functionality and user interface (the Windows version should be available this spring). The program is also well-suited for stock photo agencies or advertising agencies that require a card-catalog approach similar to that used in a library that lets you routinely check photos in and out of a database. The software provides three different graphical views; a single view, a dual view and a multiview that displays 12 images at a time. The list view is similar to Fetch's text view. CompassPoint takes a more conventional database approach to the problem of cataloging files, with user-definable fields, a three-level security system and a sturdy client/server system based on 4th Dimension from ACI US.

Its unique NaviTrack function acts as the librarian, automatically keeping track of the location of images and limiting access to authorized users. Detailed reports show who has accessed which images at what time.

CompassPoint is the only cataloger reviewed that can also handle image archiving, using NaviTrack to keep track of where images are located, where they've been used, and who is currently using them. This system has its drawbacks however. You must scan each image into the computer so that it can be represented in the database.

The method used to catalog files is indicative of CompassPoint's workman-like approach to the problem. You must bring them in a file or folder at a time through the File menu, not as convenient as the drag-and-drop approach employed by several of the other programs. More irritating is the lack of integration with other programs running on the Macintosh. You must log in and out of the CompassPoint environment using passwords, and once in the program, you might as well be using a mainframe. Because it was built in 4th Dimension, it is slow and doesn't conform well to the Macintosh interface. For example, most of the windows eschew close boxes in favor of a Done button. Memory requirements also work against it. The program can be run in 2.5 MB but prefers 4 MB. Neither leaves much room for running a program like Photoshop or Premiere alongside your multimedia database.

In CompassPoint, the amount of information shown about a file increases as the number of files displayed decreases.

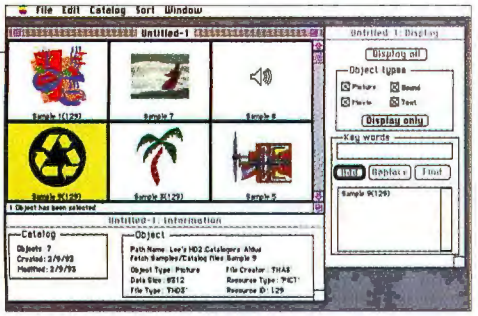
Media Cataloger

At just under 400 KB, Interactive Media Corp.'s Media Cataloger ($99) is small enough to leave some room on your hard disk for the files you are trying to catalog. Unfortunately, its compact size is achieved at the expense of features, in particular the complex search features available with Fetch and Kudo Image Browser. Media Cataloger is reasonably fast when cataloging files,

Scorecard

	CompassPoint	Cumulus	Fetch	ImagePals 1.2	Instant Database 2.0	Kudo Image Browser	MacPresents	Media Cataloger
OVERALL VALUE	**3**	**4**	**4**	**3**	**2**	**4**	**2**	**3**
FEATURES	3	4	5	3	2	4	2	3
PERFORMANCE	3	5	4	3	2	4	2	4
USER INTERFACE	3	5	4	4	3	5	1	3
LEARNING CURVE	3	4	4	4	3	4	3	4
PRICE	$749	$295	$295	$249	$95	$295	$149	$99

*Competitive upgrade available through March 31 for $199. **Reflects that many utilities are included.
Ratings Key: 5=Excellent, 4=Very Good, 3=Good, 2=Fair, 1=Poor. Overall Value takes price and competition into account.



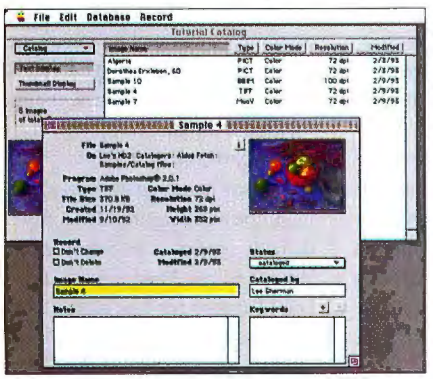
Media Cataloger displays its catalogs in a thumbnail view that can be sorted only by file name or type.

folders or entire volumes, and, thanks to its support for the XTND system, its file format support is complete. QuickTime, snd and PICT are supported directly without the need for filters.

The program offers only the most basic features. The Catalog view window displays thumbnails, QuickTime movie posters and an icon for sound files. An always-visible information window displays data about the object selected in the catalog view window including the pathname, size, object type, file type and creator. Using the info window, you can filter the catalog to display only files of a particular type. You can also add your own keywords for sorting. Double-clicking an object previews it at its natural size in a separate window, but the program lacks links to external programs beyond the use of the Clipboard. This means you'll be flipping back and forth between the Finder and Media Cataloger, essentially having to find your files twice, a definite drawback. We also encountered an anomaly with AIFF format sounds. The program doesn't claim to support the file format but it imports them without complaint. The problem comes when you try to play the sound and it returns an error message. Better error-checking would eliminate such surprises.

Cumulus

Canto Software's Cumulus ($295) anticipates the centralized media servers of the not-too-distant future. It can be configured as either a stand-alone program for use by an individual or as a server for use by a workgroup, but it was specifically designed with networking in mind. Canto has implemented a true client/server architecture whereby the server processes requests from clients running on individual



Cumulus provides detailed information about the files in a catalog. This is the program's List view.

MediaOrganizer 1.1a	MpcOrganizer 1.1a	Now Utilities	SuperBase 2.0
4	3	4**	3
4	3	3	4
4	4	3	4
3	3	3	3
4	4	4	3
$495	$295	$149	$795*

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EXECUTIVE SUMMARY

Each of the Windows packages reviewed has something going for it. ImagePals and MediaOrganizer have the best all-around feature sets. ImagePals is particularly well-suited to building image catalogs, and MediaOrganizer is especially proficient at building things like tape libraries. MpcOrganizer is a good choice if you don't need off-line cataloging capability. Instant Database is a cost-effective solution for simple applications. Superbase is for those with very sophisticated database needs who also have the time and expertise to develop a custom application.

On the Macintosh, the choices are also wide-ranging. If you work alone and have only a handful of files to catalog, you'll find that Now Scrapbook's capability to manage multiple catalogs, alternate views and unique clipboard editing capability is a significant improvement over the original Scrapbook and the best bargain in the bunch (the package includes several other extremely useful utilities). If you're on a network and need to be able to access hundreds of files of different types quickly, the prize goes to Aldus Fetch. Desktop publishers should consider Kudo Image Browser, with its ability to directly place files into Aldus PageMaker and QuarkXPress, although its search capabilities are more limited than some of the other programs. The speedy Cumulus, a surprise entrant, is the best choice if you plan to devote a Macintosh as a file server, due to its robust client/server implementation and use of System 7 features. Although MacPresents-MDM has advantages if you work exclusively in HyperCard, we can't recommend it in its current state.

Macs and sends the results back. With a system like this, available storage capacity is maximized and access speed is increased. To make it work, Cumulus exploits an under-utilized feature of System 7 (and therefore requires it) called program linking, which allows a program running on one computer to provide services to other computers on the network.

Other System 7 features are also extremely well-implemented. It is the only program reviewed that lets you subscribe to files published by other programs as an alternative to cataloging them. Records in the catalog are automatically updated when the original file changes. This feature should be used sparingly, however, since it slows down performance. The program uses Apple Events to launch other applications from within the program and to display files in the Finder.

In addition to providing keyword lists like those in the other programs, Cumulus demonstrates its workgroup orientation by associating each record with a status list. The status list can be used by a system administrator to ensure that items have been properly entered and processed. All actions taken to a catalog are maintained in an ongoing log.

The catalog window is both attractive and informative, providing details such as the color mode and resolution, and the fonts used in PostScript images. Cumulus also includes the requisite text, thumbnail and information windows.

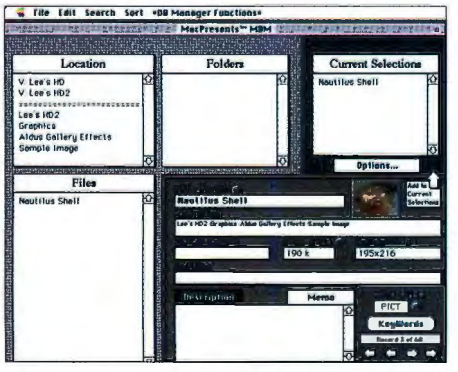
Database maintenance takes place in an administrative window, where you can view the database log, track memory usage and make backup copies of the database. A decision on which of these products to use may well be based on the number of file types that can be cataloged, an area where Cumulus comes up short. It uses its own filters rather than relying on Claris XTND but it ships with only a few. Canto will either have to increase the number of filters it provides or switch to XTND to keep up with the likes of Fetch.

This German product offers several other advantages over the competition. It can open multiple catalogs at the same time, can process files in the background, and it was by far the fastest program tested (though Kudo Image Browser came in a close second).

MacPresents

Developed at the University of Minnesota as a way to organize, store and retrieve visual elements for inclusion in a multimedia presentation, MacPresents-Multimedia Database Manager ($149) is a HyperCard-based system that works with PICT files, QuickTime movies and Macromedia animations.

The software's reliance on HyperCard is a mixed blessing. Because its companion product, MacPresents-Multimedia Presentation Manager, is also based on HyperCard, you can use the two together as a full-fledged authoring and media-management environment, exporting files from the database directly into pull-down menus in the companion software. It is also possible to use HyperCard's tools to create your own custom applications that work with the database. By relying on HyperCard, however, the developers have inherited that program's steep memory requirements and sluggish operation. Other problems stem from the basic design of the software. The program can automatically scan a volume for the file types it supports but there's no easy way to keep a catalog updated. You must either add new files one by one or re-scan your volumes periodically.



MacPresents is a HyperCard-based system that can catalog PICT graphics, QuickTime movies and Director animations.

MacPresents-MDM's best feature is the way it takes advantage of the Mac's hierarchical filing system, automatically assigning keywords to files based on the names of their parent folders (you can also add your own keywords). For example, a folder called Garden could contain a folder called Flowers which in turn could contain a file called Rose. The program would assign garden, flowers and rose as keywords for the file.

PICT files can be displayed either full-size or as thumbnails and QuickTime movies, and Director animations can be played from within the program. Unfortunately, pictures are displayed in a borderless window that can't be resized or moved to another location on the screen, an extremely awkward arrangement. Thumbnails are displayed one to a record, instead of in a group, making it difficult to make a visual comparision.

Error handling is poor. Clicking buttons often produces unpredictable results or no results at all. What's worse, MacPresents allows you to catalog file types that it can't display, including applications! Since so much of the information must be entered manually, it's easy to enter inaccurate information about your files.

The program seems to have been rushed to market. The documentation indicates that the program includes the HyperCard Player and the Macromedia Player but only the HyperCard Player was included with the copy we received. Additionally, the version reviewed for this article couldn't print reports when running under the HyperCard Player, but the company assured us that this problem will be fixed in a new release. M

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Audio/Video Cards

Adding Sight and Sound to Windows

By Steve Rosenthal

Several major PC hardware vendors have recently shipped inexpensive cards that combine audio and video capabilities on a single board. This can be a boon for overloaded PCs with few open slots and makes upgrading easier. The four boards we looked at all have Super-VGA graphics. In addition, the Thunder & Lightning adds accelerated video and basic 8-bit sound, SOUNDvision adds 12-bit sound and a SCSI interface, WinStorm adds 16-bit sound and SCSI, and Bravado goes even further with TV-style video-in-a-window.

Despite their differences, all of them claim to support a number of standards. Most of these boards include built-in compliance with the VESA VGA standard or provide driver software that emulates the program interface for VESA. The audio sections on two of the boards meet the MPC standard. And the Bravado, which accepts video signals as inputs, expects video that meets NTSC or PAL formats.

Thunder & Lightning

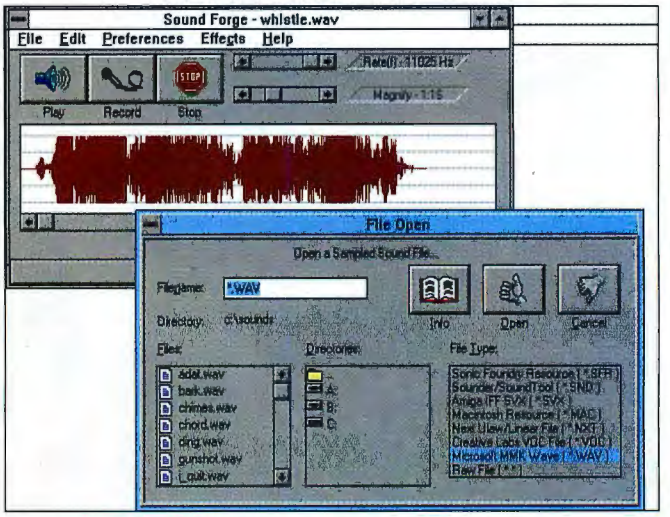
Media Vision's $349 Thunder & Lightning combines 24-bit accelerated Super-VGA graphics with moderate-quality 8-bit audio on one card. The board was designed especially with business multimedia presentations in mind, but it can also be used for entertainment applications. The half-size card fits in a single 16-bit ISA slot, but the optional joystick/MIDI adapter takes another slot in the case for its connector.

As a video board, Thunder & Lightning supports the usual 24-bit S-VGA standard of 16.7 million colors at 640 by 480 pixels and 256 colors at 1024 by 768. The board follows all VESA standards for video modes, BIOS software, connectors and refresh rates, including high vertical refresh rates of 72 Hz for reduced flicker.

In our tests, video performance was moderately good. Compared to an unaccelerated video card, Thunder & Lightning was about twice as fast at 8 bits. At 24 bits, the board just about kept up with a normal 8-bit video card.

The audio section of Thunder & Lightning was quite good at the time of its original design last year, but by now only qualifies as moderate. Audio can be digitized or played at sampling rates up to 22 kHz in 8 bits (less-than-CD quality). Software drivers and on-board hardware can compress audio files by a factor of two, or decompress previously prepared files at rates of up to 22 kHz and ratios of up to 4:1.

MIDI synthesis is provided by a Yamaha 3812 FM chip, which offers up to 11 simultaneous voices. The chip is compatible with the older Ad Lib standard, but Media Vision also includes software for Sound Blaster compatibility. An onboard 4-watt amplifier can drive small speakers directly, or the output can be connected to an external amplifier or powered speakers.



Thunder & Lightning's Sound Forge software can read a wide variety of sound file formats.

In addition to video and audio drivers for Windows, Thunder & Lightning has direct drivers for popular DOS programs such Lotus' 1-2-3, Microsoft Word and AutoCAD.

For business multimedia applications, the package includes Lotus Sound, an OLE server program that lets you record, play back, edit and embed sounds in Windows applications. The Lotus Sound program is straightforward, but it isn't intended to be a complete creative audio-editing application. Similarly, the Pocket Recorder sound program for Windows is fine for simple recording and sound editing of WAV files. The Sound Forge waveform editor is more full-featured, plus it reads popular sound file formats from several other platforms.

The included Monologue for Windows text-to-speech synthesizer does a serviceable job of reading text files out loud, although the result obviously sounds like a computer that's working from a set of rules rather than an actual knowledge of the language.

There's also At Your Service, "an animated talking calendar" complete with an on-screen character named Jeeves. Some users will find it charming, but more will find it annoying.

MIDI support is provided by a demo version of Passport's Master Track Pro sequencer. This version only runs for half an hour at a time, but otherwise provides the full features of the program.

Installation of the Thunder & Lightning is straightforward for an experienced user, but it still takes some knowledge of technical factors such as IRQ settings and DMA channels. Media Vision's technical support is backlogged, but usually helpful when you can get them.

WinStorm

Sigma Designs' WinStorm also includes 24-bit S-VGA with audio, but the audio is 16-bit and fully compatible with the MPC standard. The $429 board also includes a SCSI interface for a CD-ROM drive, but the driver software and connecting cable is a $49 option. The board takes a single ISA slot plus an extra slot position for the MIDI/joystick interface.

As a video board, WinStorm is very similar to Thunder & Light

(continued on page 74)

THE COMPUTER BOWL IS FILLING UP.

The Computer Museum's 5th Annual Computer Bowl rapidly approaches. The contestants are training hard. Sponsors are lining up. Enthusiasm is at a fever pitch. The whole world is watching. Don't wait another nanosecond. Make your ticket reservations now. The Computer Bowl is filling up. And if it's anything like last year, The Computer Bowl will soon runneth over.

The Computer Museum's 1993 Computer Bowl Presented By: The Association for Computing Machinery (ACM); Date: May 14, 1993; Place: The San Jose Convention and Cultural Facilities, San Jose, California; Satellite broadcast to: The Computer Museum, Boston, Massachusetts.

EAST COAST TEAM: Mitchell E. Kertzman, Captain, Powersoft Corporation; John F. Burton, LEGENT Corporation; Neil J. Colvin, Phoenix Technologies Ltd.; Alain J. Hanover, Viewlogic Systems, Inc.; Patricia B. Seybold, Patricia Seybold Group. WEST COAST TEAM: Harry J. Saal, Captain, Network General Corporation; Jean-Louis Gassée, Be Incorporated; Jerry Kaplan, GO Corporation; Michael A. McConnell, SuperMac, Inc.; Lisa G. Thorell, Dataquest Incorporated. "THE EXAMINER," Bill Gates, Microsoft Corporation. JUDGES: Dr. David L. Nelson, Fluent, Inc.; John F. Shoch, Asset Management Company.

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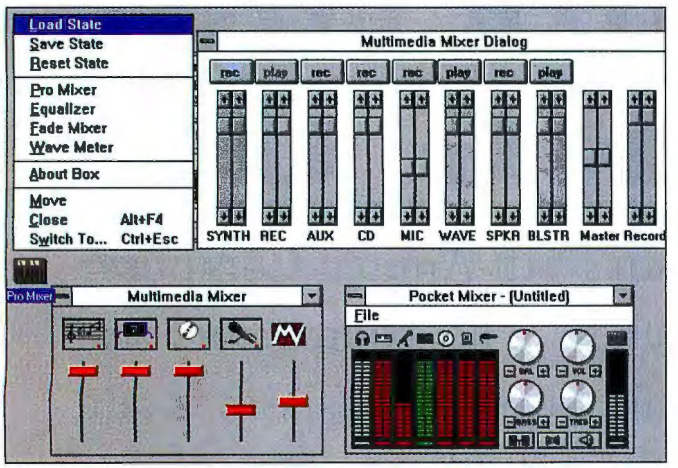
The Computer Bowl



WinStorm has three different mixers for Windows—but we had to turn one up far above the default level to hear any MIDI output at all.

(continued from page 72)

ning. It supports the full 24-bit S-VGA standard of 16.7 million colors at 640 by 480 pixels and 256 colors at 1,024 by 768. The board follows all VESA standards including feature connector, plus it stores extended configuration information in its own EEPROM memory. WinStorm supports vertical refresh rates of 120 Hz at 640 by 480 up to 72 Hz at 1,024 by 768.

We found video performance to be very close to that of Thunder & Lightning (the only other accelerated board in this review). That gave it a speed about two times that of a standard VGA card at comparable resolutions.

WinStorm's audio section closely resembles the Media Vision Pro AudioSpectrum 16, and even uses a licensed version of the Pro AudioSpectrum software. The board records and plays back 16-bit stereo sound at rates up to 44 kHz.

WinStorm uses a Yamaha OPL-3 FM chip for MIDI synthesis giving it up to 20 simultaneous voices. As with the Pro AudioSpectrum, the board is compatible with Ad Lib, but needs an extra IRQ and port setting for Sound Blaster compatibility. The board also has an onboard 2-watts-per-channel amplifier.

WinStorm has the usual video and audio drivers for Windows, plus direct drivers for popular DOS programs. In addition, the package includes a multimedia presentation program, an audio control program and a music library.

The presentation program is Multimedia Make Your Point, an easy-to-use package by Asymetrix that's particularly good at making bullet-style slide shows.

Music Rack lets you play waveform, MIDI or CD audio, using an on-screen graphical metaphor of an elaborate boombox. Whether this is a desirable interface is a matter of taste. The Midisoft music collection is a starter sampler of a larger collection from Music Technology Associates.

In addition, the program includes three Windows mixers and a simple Pocket Recorder waveform recording and editing application.

Installation should have been straightforward. But although the Windows software install program asks specifically whether you want to start with default settings, the test result was an initial mixer setting that did not produce any audible output from MIDI files. Sigma walked us through the process and found the problem, but the manual didn't even mention this possibility or the several error messages that came up during attempts to install the software over previous sound drivers.

SOUNDvision

The Cardinal Technology SOUNDvision combines unaccelerated S-VGA video with 12-bit sound recording, 16-bit sound playback and a SCSI port. The $399 board also includes a SCSI interface for a CD-ROM drive, but the driver software with connecting cable is a $49 option. The board occupies a single ISA slot plus an extra slot position for the MIDI/joystick interface.

The video section of the SOUNDvision is comparable to a midrange S-VGA card. The board supports resolutions up to 1024-by-768 pixels non-interlaced, with Hi-Color (32,000 or 65,000 color) at 640 by 400 or 640 by 480 pixels. The BIOS isn't directly compatible with VESA standards, but Cardinal supplies a software VESA driver program. As in the original VGA standard, SOUNDvision supports vertical refresh rates from 44 to 70 Hz.

The SOUNDvision's video performance was noticeably slower than the accelerated video cards, but respectable.

The audio section of the SOUNDvision board most closely resembles the Ad Lib Gold card, including 12-bit recording and selectable ADPCM compression at ratios up to 3:1. The playback system is full 16-bit, using the Yamaha

(continued on page 76)

WINDOWS AUDIO/VIDEO CARD FEATURES

	Thunder & Lightning	WinStorm	SOUNDvision	Bravado 8/16
Company	**Media Vision**	**Sigma Designs**	**Cardinal Technologies**	**Truevision**
Video				
Max. color depth	24-bit	24-bit	16-bit	8/16-bit
Max. resolution	1024 x 768	1024 x 768	1024 x 768	1024 x 768
Acceleration	Yes	Yes	No	No
Video in a window	No	No	No	Yes
Video frame capture	No	No	No	Yes
Audio				
Wave input	8-bit	16-bit	12-bit	N/A
Wave out	8-bit	16-bit	16-bit	N/A
MIDI out	11 voices	20 voices	20 voices	N/A
Output level	2 W/channel	2 W/channel	line level	2 W/channel
MPC compatible	No	Yes	Yes	N/A
CD-ROM interface	None	SCSI	SCSI	None
Expansion bus	No	No	No	Yes

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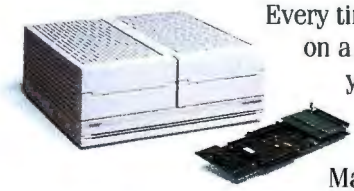

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Circle 55 on Reader Service Card

(continued from page 74)

OPL-3 FM synthesizer chip for 20-voice output and playback rates up to 44.1 kHz. The sound drivers are compatible with the Ad Lib, MPC and Ad Lib Gold standards, but not with the Sound Blaster standard.

SOUNDvision includes a full set of Windows drivers, plus drivers for major DOS program such as 1-2-3 and WordPerfect. The basic sound software comes from Voyetra, including the firm's well-regarded Sequencer Plus Junior sequencer program. Voyetra also supplied a set of audio recording and editing programs, plus a script-based animation and sound player that supports the Autodesk .FLI animation format.

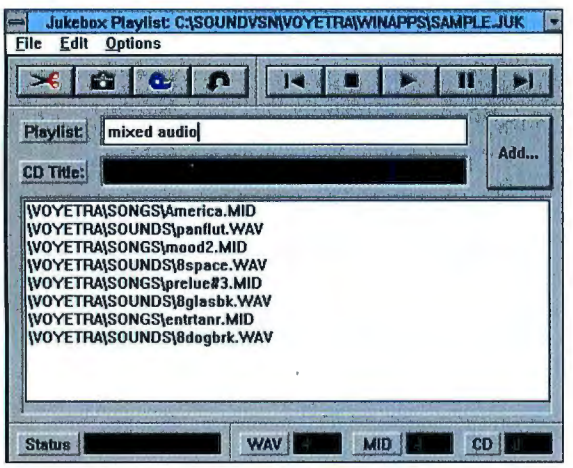
For users who want higher-level tools, SOUNDvision also includes Mathematica's Tempra Show and Tempra GIF. The first is an event-based multimedia presentation program, while the second is a limited version of the full Tempra Pro paint and image-editing program.

SOUNDvision's manuals are often sketchy and a bit jumbled, making installation of this package a task best done by someone with experience. Fortunately, Cardinal technical support is above average.

Scorecard

	Thunder & Lightning	WinStorm	SOUNDvision	Bravado 8/16
OVERALL VALUE	**3**	**4**	**3**	**3**
FEATURES	3	4	3	4
PERFORMANCE	4	4	3	4
USER INTERFACE	3	3	3	3
LEARNING CURVE	3	3	3	4
PRICE	$349	$429	$399	$1,295/$1,495

Ratings Key: 5=Excellent, 4=Very Good, 3=Good, 2=Fair, 1=Poor.
Overall Value takes price and competition into account.



SOUNDvision contains several Voyetra sound programs, including a Jukebox player that lets you mix WAV, MIDI and CD-audio.

Bravado

The Truevision Bravado is designed to be a bridge card between the emerging world of digital multimedia and the current world of analog program content. This board combines S-VGA video with what Truevision calls "Video-in-Window" display of NTSC and PAL video plus a software-controlled audio selector and amplifier.

The product comes in basic Bravado and more full-featured Bravado 16 versions, both configured as full-sized ISA (AT-bus) cards. Both variants include 768 KB of VRAM for displays of up to 1024 by 768 pixels, but the Bravado is limited to 16 colors at that resolution while the Bravado 16 shows 256. Both accept NTSC and PAL composite video for display in a window, but the Bravado 16 model also adds S-video inputs. Only the Bravado 16 has a full set of connectors for audio, video, encoding and a pass-through AT-bus (ISA) slot.

The basic VGA display capabilities of the Bravado put it at about the mid-range level. Both models can display 256 colors at 640 by 480, but the Bravado 16 also offers a Hi-Color mode with 32,000 colors. The video BIOS is not directly VESA compatible, but Truevision supplies a TSR (RAM-resident) program to deliver that feature in software.

The Bravado package includes software drivers for Windows and for half a dozen or so popular DOS packages. In addition, a set of Windows utilities let you grab video images, adjust video parameters (such as hue, saturation and contrast) and change audio settings (such as volume, balance, treble and bass). There's also a simple player utility for controlling a videodisc through the serial port.

When tested, video performance was noticeably slower than the accelerated video cards, but respectable for an unaccelerated model.

The extra bus connectors on the Bravado 16 make this card potentially the most flexible of any in this group. So far, at least four companies have announced compression daughterboards that will give the Bravado real-time frame capture and display.

Bravado's documentation is clearly written and well illustrated. Installation is easy, but some of Truevision's Windows install procedures vary in name or detail from the usual practices. Truevision technical support has generally been noticeably above average.

Conclusions

If you need a complete MPC-compatible upgrade solution but your PC is fully loaded, the SOUNDvision and WinStorm cards include all the key elements on a single card that replaces your video card. The accelerated video of WinStorm is particularly attractive for multimedia applications, and the true 16-bit input and output is more suitable than 12-bit for high-end applications. For everyday purposes, 8-bit sound quality is fine.

Thunder & Lightning has accelerated video, but no SCSI port for connection to CD-ROM drive. It can be a cost-effective solution for machines that already have a SCSI port—or for mass upgrading of networked PCs that will be fed multimedia over a network rather than through a CD disc.

The Bravado is a special case, with its video-capture and audio pass-through capabilities. The expansion buses on the Bravado-16 make this card the most flexible model in the collection. However, by the time you add the supplemental hardware that takes advantage of these connectors, you're likely to be spending far more than for any of the other boards here. **M**

Cardinal Technologies Inc., 1827 Freedom Rd., Lancaster, PA 17601; (717) 293-3000
Reader Service No. 551

Media Vision Inc., 3185 Laurelview Court, Fremont, CA 94538; (415) 770-8600.
Reader Service No. 552

Sigma Designs Inc., 47900 Bayside Parkway, Fremont, CA 94538; (510) 770-0100.
Reader Service No. 553

Truevision Inc., 7351 Shadeland Station, Suite 100, Indianapolis, IN 46256; (317) 841-0332.
Reader Service No. 554

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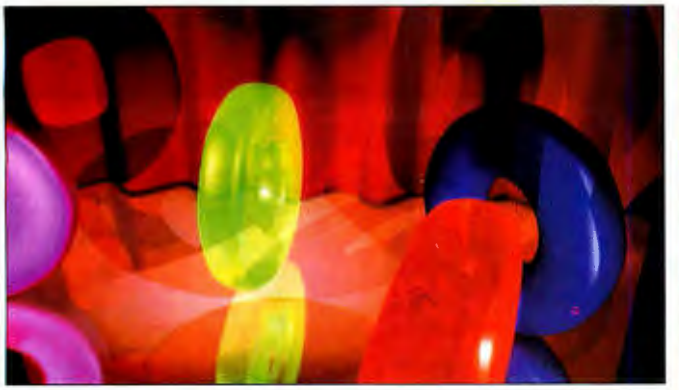


Mac Playmation Now Shipping

SPOTLIGHT

Playmation, 3-D modeling, rendering and animation software for the Amiga and PC, is now available for the Mac, with the same features for all platforms.

Sculptor, Playmation's modeling tool, uses curved surfaces called patches for spline-based modeling. Objects can be viewed from multiple angles and rotated. A quick-rendering feature lets artists preview work. A library of wireframe objects encompasses props like candles and cutlery, and scenery like palm trees.

With the animation tools, artists define first and last key frames in a sequence and Playmation creates all the frames in between. The package contains a collection of about 10 textured animated figures, such as a duck, mannequin, spaceship, dinosaur and helicopter, which are set in a scene and come with preset movements like walking or running. Animators can create scenes that combine objects, lights, a camera and actors. Camera and light-tracking features provide eight types of controllable lighting.

Rendering capabilities include ray tracing of smooth, curved surfaces, definable textures and the ability to add shadows from multiple light sources. Bitmap images, including bump maps, transparency maps and reflection maps, can be wrapped around objects. Textures can be defined, modified and reused. Artists can render an object while working on other projects by using the multitasking feature.

The basic Playmation system for the Mac supports 176-by-120 and 320-by-200-pixel QuickTime output in 8-bit color. The PC version supports Autodesk FLI files. Render 24, an optional software add-on ($100 to registered users), provides full support for QuickTime in 16-bit and 32-bit resolutions for the Mac, and for Targa files on the PC. The Amiga version offers full 24-bit rendering support and provides output in 24-bit IFF and 320-by-200 and 176-by-120 HAM files.—*Celia Skipton*

Amiga IBM Mac Will Vinton's Playmation, 714 E. Angeleno St., Unit C, Burbank, CA 91501; (800) 377-8287. REQUIREMENTS: Amiga: Amiga w/math coprocessor, 5 MB RAM. IBM: 386 and above w/math coprocessor, Windows, VGA, 8 MB RAM recommended. Mac: Mac II family w/math coprocessor, System 7, 8 MB RAM recommended. PRICE: $299.

Reader Service No. 402

Audio

20-20 Sound Editor

The 20-20 Sound Editor is audio editing software that runs under Windows and supports popular audio cards. The Waveform Editor provides cut, copy and paste tools; an 8-track audio mixer lets musicians mix voices, background music and sound effects. Echo, reverb, fade-in, fade-out and other effects can be added to tracks. A synchronization test lets users check audio files against other components of a presentation. The 20-20 Sound Editor is compatible with Autodesk's Player for Windows.

IBM MKS Compu-Group Inc., 1730 Cunard St., Laval, Quebec, Canada, H7S 2B2; (514) 332-4110. REQUIREMENTS: 386 and above, Windows 3.1, Windows sound card. PRICE: $49.95.

Reader Service No. 403

Read My Lips

Read My Lips software for the Mac lets users record voice or sounds and attach digitized audio clips to documents. Audio is recorded in Sound resource or AIFF format. The program places a SoundNote icon in documents so that an attached sound or audio file can be found. SoundNotes can be cut and pasted into different applications or documents. Read My Lips includes a run-time-only version for distribution. The software works with 24 popular applications including FileMaker Pro, ClarisWorks, Microsoft Works, PowerPoint, Excel, PageMaker, Persuasion and QuarkXpress.

Mac Praxitel, Box 452, Pleasanton, CA 94566; (510) 846-9380. REQUIREMENTS: Mac Plus and above, System 7 recommended. PRICE: $119.

Reader Service No. 404

Authoring

Authority Multimedia

Authority Multimedia is a new, renamed multimedia version of HyperCASE authoring software for the IBM PC that allows incorporation of digitized audio and MIDI sound files or playing music from a CD player from within a created application. Video-in-a-window can be added to programs and overlaid with text or graphics. A new menu component creates pull-down menus that branch to other resources in a created application. HyperLang, Authority's programming language, has been extended to include twice as many built-in functions and variables; new features include greater control over file management and serial port specifications, and support for use of databases like Borland's dBASE III, Fox's FoxBase and Nantucket's Clipper in applications.

IBM Interactive Image Technologies Ltd., 700 King St. W., Toronto, Ontario, Canada, M5V 2Y6; (416) 361-0333. REQUIREMENTS: 286, DOS 5.0 or later recommended, EGA/VGA display, 1 MB RAM. PRICE: $595.

Reader Service No. 405

CanDo 2.0

CanDo is authoring software for the Amiga. The new version includes Script Bookmarking for returning to scripts in a couple of keystrokes. The SuperDuper utility lets users insert spreadsheet-style columns and rows of buttons, fields or sliders into an application. The Object Layer tool changes the hierarchy of objects, and the Bug Basher feature improves error checking on scripts. The Configuration utility provides one interface for defining and editing the location of documents or tool types.

Amiga INOVAtronics Inc., 8499 Greenville Ave., Suite 209B, Dallas, TX 75231; (214) 340-4991. REQUIREMENTS: Amiga with 1 MB RAM. PRICE: $199.95.

Reader Service No. 406

Course Builder

Course Builder is an authoring system for the Mac for creating interactive training programs and public information systems. The new

release includes a QuickTime extension for integrating digitized movies and sound into Course Builder training programs.

Mac Discovery Systems International Inc., 7325 Oak Ridge Highway, Suite 100, Knoxville, TN 37931; (615) 690-8829. REQUIREMENTS: Mac Plus and above, System 6.0.7, 5 MB RAM for color. PRICE: $1,495 (commercial), $995 (academic).

Reader Service No. 407

Kodak Photo CD Access Developer Toolkit

The Kodak Photo CD Access Developer Toolkit, previously available for the Mac and PC, is now shipping for the Sun platform. The kit lets developers build a flexible user interface to images stored on Photo CD discs. The product features a library of basic C-language functions needed to read images from a Photo CD disc into memory in formats compatible with the Unix environment. The functions needed to export images as TIFF or EPS files are included. The images can be read in standard color and grayscale formats including 24-bit RGB color. Simple image-manipulation tools are provided.

Sun Eastman Kodak Co., 343 State St., Rochester, NY 14650; (800) 242-2424. REQUIREMENTS: SPARCstation, Sun OS 4.1.1 or later or Solaris 2.1, Sun CD-ROM XA drive. PRICE: $695.

Reader Service No. 408

Display

PanelBook

The PanelBook is an active matrix LCD panel that projects full-motion video and displays 1.4 million colors with a screen resolution of 640 by 480 pixels. The panel measures 9.5 by 2 by 11.5 inches with a 9.4-inch diagonal screen. The PanelBook supports NTSC, PAL and SECAM video signals and includes a universal power adapter and a hand-held remote control.

ShareView Plus Video Conferencing Breakthrough

SPOTLIGHT

ShareView Plus is a new desktop video conferencing system for the Mac. It is the first product that enables users to exchange voice communication, video, data and documents over a standard telephone line.

ShareView's audio and data communications card lets users transmit and receive faxes, and a Plantronics Mirage headset and a standard telephone receiver are included for voice communications.

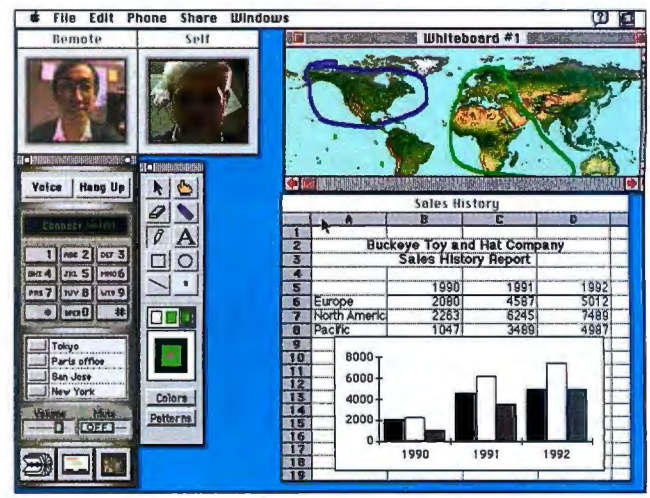
A video capture and compression card and color video camera provide color video transmissions. Users at either end can capture 24-bit still images, full-motion 24-bit video, audio and data. Full-motion video is displayed at resolutions from 96 by 80 pixels to 192 by 160 pixels. Still images are shown in 144-by-112-pixel resolutions. Material is stored in ShareView Plus format and can be converted to QuickTime for distribution and playback independently of the ShareView Plus system.

ShareView includes a phone book utility for making standard telephone calls and video conferencing calls. An on-screen whiteboard for brainstorming includes draw, paint and text tools. With the OnSight software, users can simultaneously work on documents together in applications such as Excel, MacWrite and PageMaker. Users can transfer folders or files and create and exchange business cards that feature name, address, telephone number and snapshot.

—Celia Skipton

Mac ShareVision Technology Inc., 2951 Zanker Rd., San Jose, CA 95134; (408) 428-0330. REQUIREMENTS: Mac II, Quadra, Performa 600 with two NuBus slots, 4 MB RAM, System 7, standard RJ-11 telephone outlet. PRICE: $4,499.

Reader Service No. 401



IBM Mac InFocus Systems Inc., 7770 S.W. Mohawk St., Tualatin, OR 97062; (800) 327-7231. PRICE: $5,995.

Reader Service No. 410

TouchMonitors

The Elographics' TouchMonitors line includes two 14-inch monitors and one 17-inch monitor. The first 14-inch monitor is based on the GoldStar 1453Plus and provides S-VGA video resolution. The ViewSonic 5E color monitor is incorporated in the second monitor and provides non-interlaced video res-

TruePoint TM-2 Touch Monitor

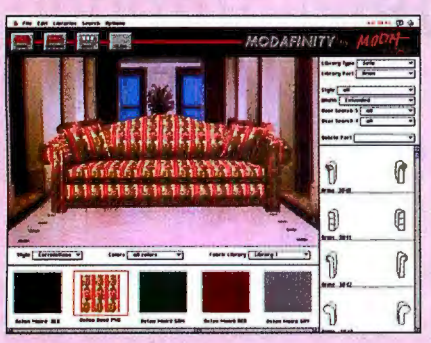
The TruePoint TM-2 Touch Monitor includes a 14-inch S-VGA display, an integrated high-resolution touchscreen, a controller and mouse emulation drivers for DOS, Windows and OS/2. The system features a resolution of 1,024 by 1,024 touch points and records a touch within 15 milliseconds of finger contact. Software for handling graphic screens and touch zones is included.

IBM MicroTouch Systems Inc., 55 Jonspin Rd., Wilmington, MA 01887; (508) 694-9900. PRICE: $1,599.

Reader Service No. 411

Envision 4.3 & ModaFinity

Envision 4.3 is a 32-bit modeling and rendering program for the Mac and PC that is used as a visualization tool for industrial, architectural and interior design. The upgrade provides new scaling features, anti-aliasing and edge-smoothing tools to achieve photorealistic results. A new seaming feature automatically joins parts for fabrics or objects. The new version lets designers set lighting from any direction and alter the colors of lights. ModaFinity is software for the Mac or PC for designing furniture items. The product uses a database of furniture parts to create realistic items with fabric treatments, pleating and welting. A finished item can also be placed in a room background for presentation purposes. ModaFinity has video, slide show and music capabilities.



IBM Mac ModaCad Inc., 1954 Cotner Ave., Los Angeles, CA 90025; (310) 312-6632. REQUIREMENTS: IBM: 386 and above, Windows 3.1. Mac: Mac II family, 16 MB RAM. PRICES: $1,995 (Envision); $4,000-$6,000 (ModaFinity).
Reader Service No. 413

olution up to 1,024 by 768. The 14-inch monitors come with proprietary AccuTouch or IntelliTouch touchscreens. The 17-inch monitor is based on the ViewSonic seven-color FST monitor and provides a non-interlaced resolution of 1,280 by 1,024 pixels. This monitor also has the AccuTouch touchscreen.

IBM Elographics, 105 Randolph Rd., Oak Ridge, TN 37830; (615) 482-4100. PRICE: $1,255-$2,250.
Reader Service No. 409

Graphics

Halo Desktop Imager 2.0

Halo Desktop Imager is a package of image processing, file conversion and printing utilities that runs under Windows. The upgrade includes new image-retouching tools and a new image-file management interface called Gallery. This version adds OLE and supports Kodak Photo CD files. Graphic artists can now add text to images. TrueType fonts, the TWAIN standard and JPEG compression are supported.

IBM Media Cybernetics Inc., 8484 Georgia Ave., Silver Spring, MD 20910; (301) 495-3305. REQUIREMENTS: Windows 3.0 and above. PRICE: $169.
Reader Service No. 414

SuperPaint 3.5

Aldus SuperPaint 3.5, the popular painting and drawing program for the Mac, now provides direct scanner support through TWAIN and works with QuickTime and Kodak Photo CD files. Tools like the Magic Marker, Calligraphy brush, Twister, Variable-size Eraser, Texture Brush; the Smudge tool and Charcoal tool now support pressure. A new Copy Brush tool lets artists use a scanned image as a reference and either paint a copy or modify the image with one of the visual effects included with the upgrade. The new version supports Publish & Subscribe. SuperPaint 3.5 opens PICT, TIFF, EPS, MacPaint, StartupScreen, Apple Scanner, ThunderScan TIFF, Paint Texture, Draw Texture, QuickTime and TWAIN files. The software exports PICT, TIFF, EPS, MacPaint and Texture files. Samples from Aldus Gallery Effects: Texture Art ship with the new version.

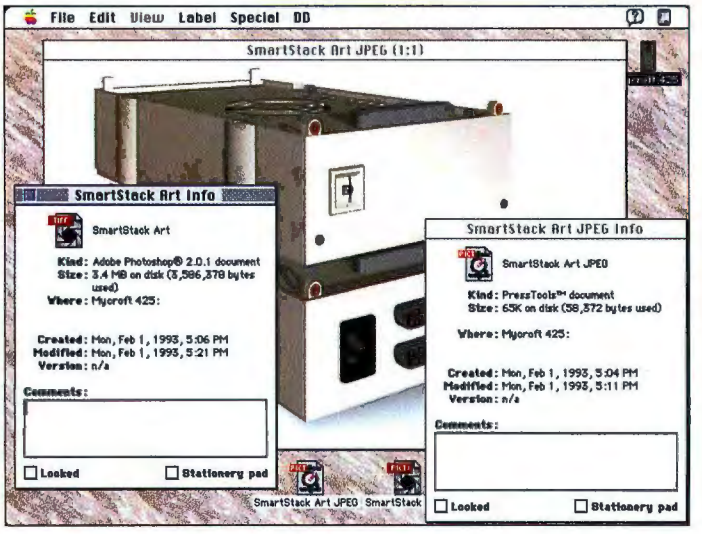
Mac Aldus Corp., 411 First Ave. S., Seattle, WA 98104; (206) 628-2361. REQUIREMENTS: System 6.0.5 or better with 32-bit QuickDraw, 4 MB RAM. PRICE: $199.
Reader Service No. 412

Pressto Offers Accelerated JPEG Compression

SPOTLIGHT

Envisio's Pressto, an accelerated JPEG compression board for NuBus-equipped Macs based on C-Cube Microsystems CL550 JPEG processor, speeds up the opening, closing and refreshing of JPEG-compressed still images. The package includes a QuickTime component (codec) for transparent JPEG compression and decompression within applications that support QuickTime. According to the vendor, Pressto improves the performance of QuickTime's software JPEG codec by up to 10:1 on a Mac IIcx and up to 6:1 on a Mac IIfx. Envisio's Presstools software lets users open non-QuickTime JPEG files, including files created by Adobe Photoshop's JPEG export module. Graphics files can also be viewed and compressed with Presstools.—Celia Skipton

Mac Envisio, 2640 Patton Rd., St. Paul, MN 55113; (612) 628-6288. REQUIREMENTS: Mac IIsi and above, System 6.0.7 or later. PRICE: $795.
Reader Service No. 400



Multimedia Systems

CDI 350

The CDI 350 portable CD-I player sports a 6-inch active-matrix color LCD screen that supports either

LazerRays II

LazerRays II, ray-tracing software for the PC, has modeling tools that let artists create scenes with reflections, refraction, transparency and sharp and soft shadows. Models can be imported in popular 3-D formats. Texture maps can be wrapped around models or applied to surfaces. The program supports Lumena, PIX, Targa and TGA files. A low-resolution sketch mode supplies a quick preview of a finished scene. Lighting features include multiple colored light sources, infinite point and spherical lights with intensity dimming over distance and ambient and background illumination. A hierarchical database lets artists group objects and groups of groups. Objects, groups and scenes can be rotated on three axes. Graphics are rendered at 1,024 by 768 pixels in 24-bit color.

IBM Lazerus, P.O. Box 13249, Oakland, CA 94661; (510) 339-6263. REQUIREMENTS: 386 w/math co-processor and above, 5 MB disk space. PRICE: $199.95.

Reader Service No. 415

NTSC or PAL signals, a built-in pointing device and stereo speakers. The player has video and audio ports for connection to a television, monitor or video projector. Its serial I/O port supports input from touchscreens or a keyboard. An optional battery pack for the CDI 350 is available.

CD-I Philips Consumer Electronics, 1 Philips Dr., P.O. Box 14810, Knoxville, TN 37914; (800) 835-3506. PRICE: $2,195.

Reader Service No. 416

MediaSonic Super Professional Deluxe

MediaSonic Super Professional Deluxe is a multimedia upgrade kit for the Mac and PC. This expansive bundle includes a pair of 2LOW-D "talking" speakers that provide high-fidelity sound and critique chosen sound clips with appropriate synthetic messages such as "too loud," "more bass" or "too boring." The kit features a double-speed CD-ROM drive that spins discs at a 45-degree angle to achieve faster access times and data-transfer speeds. The PC version sports the BlasterOut SpectrumPro 16-bit sound card from Warble Technologies. A collection of CD-ROM titles, including *Spaceship Princess*, are part of the package.

IBM Mac April One Peripherals, 4192 Fools Dr., San Mateo, CA 94404; (415) 573-5170. REQUIREMENTS: A tin ear. PRICE: $99.99.

Reader Service No. 900

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Macintosh Requirements: Mac® Plus or higher, 2.5 MB RAM, System 6.0.5 or higher, CD ROM drive.
Windows Requirements: IBM® or compatible with Windows 3.0 (with multimedia extensions) or higher, CD ROM drive.
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PC Multimedia PC

Circle 26 on Reader Service Card

St. Clair's Kiosk Systems

St. Clair Interactive Communications Inc. is shipping a new line of kiosks based on the Commodore Amiga. The Basic unit includes an Amiga 1200 computer, custom Amiga graphics and sound coprocessors, 2 MB RAM, a 40-MB hard drive, a color display monitor, numeric keypad and trackball interface and a simple enclosure. The Deluxe system, based on the Amiga 4000, features 6 MB RAM and a 120-MB hard drive. This model sports a touchscreen, a high-resolution monitor, a 2400-baud modem and speakers. The system enclosure comes in several colors. The Premier system provides the same features as the Deluxe system, plus a 25-MHz processor and 10 MB of RAM. The system delivers full-motion video from the hard drive and includes a printer, a 14.4 V.32 bis modem and runtime software for multimedia delivery. A central control operations system with software updates information and gives remote status reports on individual kiosks. Communications software and an upgraded enclosure come with the Premier system. The turnkey systems are available in quantities of 100. Quantity sales of the three systems include design and production of graphics and multimedia elements for the client's specific use.

Amiga St. Clair Interactive Communications Inc., 150 Laird Dr., Toronto, Ontario, Canada, M4G 3V7; (416) 423-7825. PRICE: $2,850 (Basic unit), $5,500 (Deluxe system), $9,600 (Premier system).

Reader Service No. 417

Presentation & Animation

Audio/Video Key-PC Presentation Kit

This IBM PC-based presentation product consists of Comedge's Audio/Video Key, two external plug-in devices that provide audio input and output from the parallel port and simultaneous video display and recording of VGA output to a television, VCR or VGA monitor. The device supports VGA cards in video modes up to 640 by 480 pixels in 24-bit color or 800-line broadcast-quality resolution and provides RGB input and composite NTSC output. On the audio side the product features built-in speakers and connections for a microphone, headphone or external speakers. The complete PC Presentation Kit also includes HSC Interactive authoring software for creating presentations.

IBM Comedge Inc., 2211 S. Hacienda Blvd. #100, Hacienda Heights, CA 91745; (800) 775-1927. REQUIREMENTS: 386 and above, 1 MB RAM, VGA port and printer port. PRICE: $795.

Reader Service No. 420

Realize 2.5

The Realize Rendering Tool 2.5 is 3-D animation software for the PC that displays animations in resolutions up to 1,024 by 768 pixels in 8-bit color. In interactive mode, models can be rotated, moved back and forth with the mouse, viewed from left or right side and from top or bottom. Tools for rendering smooth, flat and gradient surfaces with textures are included. The software provides unlimited point and constant

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lights and a slide-show presentation function. PCX images in 16 and 256 colors can be imported for titling. Animations are built by defining key frames or views and the Realize Rendering Tool completes the full animation path. A movie scripting feature lets animators combine multi-resolution movies using a simple script file. The software imports DXF files, Cadkey Solids, CDL three- and four-sided polygons and STL files.

IBM Lunar Graphics Inc., 23845 Currant Dr., Golden, CO 80401; (303) 526-2553. REQUIREMENTS: 386 and above. PRICE: $695.
Reader Service No. 421

Stanford Graphics

Stanford Graphics 2.1 is presentation software that runs under Windows. A 4-D, 70-trillion cell spreadsheet lets presenters manipulate data graphically. The program provides 160 graph types, a Slide Sorter for organizing presentations, a bullet-chart outliner and the ability to create speaker notes. The latest version provides rotatable TrueType axis titles and OLE client and server support. Each item in the program now has context-sensitive menus providing a pop-up menu of options specific to the object selected. Change Graph and Change Data commands provide a quick switch between graph types and data sets. Presenters can customize graph and text attributes. PictoGraphs and PictoFills tools fill objects or graph elements with clip art or photographic images for example showing a stack of automobiles for auto sales increases.

IBM 3-D Visions Corp., 2780 Skypark Drive, Torrance, CA 90505; (800) 729-4723. REQUIREMENTS: Windows 3.1. PRICE: $495.
Reader Service No. 422

Resources

Sound Blaster: The Official Book

Sound Blaster: The Official Book by Richard Heimlich with David M. Golden, Ivan Luk and Peter M. Ridge covers Creative Labs' line of sound cards including Sound Blaster, Sound Blaster Pro, Sound Blaster 16 and the Sound Blaster Multimedia Upgrade Kit. A floppy disk featuring utilities like Sputmon and Blaster Master and a collection of sound files and musical jingles comes with the book.

Osborne/McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710; (800) 227-0900. PRICE: $29.95.
Reader Service No. 424

Storage

SiliconExpress 3D and ExpressStripe

SiliconExpress 3D is a differential FAST SCSI-2 accelerator card that fits into the NuBus slot of the Mac. ATTO Technology states that the board increases SCSI transfer rates to 10 MB per second and lets users place SCSI devices at a distance of 27.34 yards. ExpressStripe software uses a parallel architecture that reads and writes data across several drives at once, reducing data access times by overlapping drive searches. The software lets drives transfer data simultaneously, multiplying

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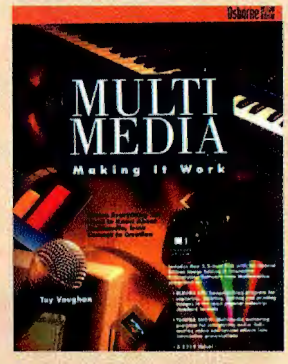
Circle 86 on Reader Service Card

Multimedia: Making It Work

Multimedia: Making It Work by Tay Vaughan is an extensive guide to multimedia, its components and how to create productions and presentations. The book covers producing multimedia on the Macintosh and under Windows and includes information on using everyday tools and authoring software. Chapters focus on setting up and installing multimedia projects, packaging, and working with video and CD-ROMs. Special editions of Mathematica Inc.'s Tempra GIF image-editing software and Tempra Show presentation software come with the book.

Osborne/McGraw Hill, 2600 Tenth St., Berkeley, CA 94710; (800) 227-0900. PRICE: $27.95.

Reader Service No. 423



data transfer rates. ExpressStripe can support up to four drives of equal size. SiliconExpress 3D and ExpressStripe provide SCSI-2 and SCSI-1 support for disk storage, removables and opticals.

Mac ATTO Technology Inc., Baird Research Park, 1576 Sweet Home Rd., Amherst, NY 14228; (716) 688-4259. REQUIREMENTS: Mac II family or Quadra. PRICE: $995 (SiliconExpress 3D), $395 (ExpressStripe).

Reader Service No. 418

Speedcache Plus 4.0

Speedcache Plus 4.0 is disk-caching software for the PC for both CD-ROM players and hard drives that greatly increases the speed of Windows, DOS and CD-ROM applications. The program provides control over how memory is proportioned between caching on a CD-ROM drive and other disk drives. The Speedcache Plus caches frequently accessed portions of files on the CD-ROM disc, the entire file is only cached if specified. The product is compatible with many CD-ROM drives, including NEC, Chinon, Sony, Tandy and Panasonic.

IBM Future Systems Solutions, 0420 South 500 East, Bluffton, IN 46714; (219) 447-8204. PRICE: $129.95.

Reader Service No. 419

Video Capture

Studio Magic

Studio Magic is a 16-bit full-motion and still-frame video capture board that runs under Windows. The card includes video titling and special effects software and supports Sony's VISCA protocol for controlling up to three

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Circle 21 on Reader Service Card

video devices. Audio supported includes MIDI, CD audio and WAV files. Studio Magic is Sound Blaster compatible.

IBM Brown Wagh Publishing, 160 Knowles Drive, Los Gatos, CA 95030; (408) 378-3838. REQUIREMENTS: 386 and above, 16-bit slot, VGA card w/feature connector, 2 MB RAM, DOS 3.1, Windows 3.1. PRICE: $499.95.

Reader Service No. 425

WaveWatcher-TV

The WaveWatcher-TV card turns a PC with a standard VGA monitor into a TV receiver. An on-screen remote-control pad controls picture quality, audio, channel selections from 122 channels and programming. The TV screen can be scaled from full-screen to icon-sized. WaveWatcher-TV captures still images from television programs or other video sources in 24-bit PCX, TIF, BMP, MMP, Targa and JPEG file formats. VideoShow software from Entropy Software for adding special effects to presentations and ProImage image-editing software from Prolab come with the board.

IBM Aitech International Corp., 830 Hillview Court, Suite 145, Milpitas, CA 95035; (408) 946-3291. REQUIREMENTS: 386, Windows 3.1, 2 MB RAM. PRICE: $589.

Reader Service No. 426

Video Editing

Personal Producer 1.2

Personal Producer 1.2 is video-editing software for the Matrox Studio professional video-editing system for PCs. The new release features a Cut Editor that accelerates the basic task of performing cuts editing. A clip collection and storyboard are created as the cut list is formed. Other new enhancements include more direct keyboard functions such as transition duration and trim in/trim out points and support for scrolling and crawling titles. Turtle Beach Systems Wave for Windows audio-editing software is bundled with the upgrade. The upgrade is free to registered users of Matrox Studio.

IBM Matrox Electronic Systems Ltd., 1055 St. Regis Blvd., Quebec, Canada, H9P 2TA; (514) 685-2630. REQUIREMENTS: EISA bus. PRICE: $15,990 (Matrox Studio including software); upgrade free to registered users.

Reader Service No. 427

VideoLinx PTV

The VideoLinx PTV converts computer graphics from the Mac or PC to NTSC video. The product lets presenters overlay text, graphics, animations and special effects onto video and then output the finished product to a video tape recorder or television. The hardware provides 262,000 colors at a resolution of 640 by 480 pixels. For the PC, VideoLinx PTV comes as an internal board or a stand-alone box, called the VideoLinx PTV Plus. The Mac version ships as an external box. The VideoLinx Plus additionally provides controls for flicker reduction, hue and black-level adjustment.

IBM Mac VideoLinx Inc., 987 University Ave., Suite 10, Los Gatos, CA 95030; (408) 395-9593. REQUIREMENTS: Mac or PC supporting S-VGA 640-by-480 output. PRICE: $595 (VideoLinx PTV, PC), $695 (VideoLinx PTV Plus, PC), $795 (VideoLinx PTV Plus, Mac).

Reader Service No. 428

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Nimbus
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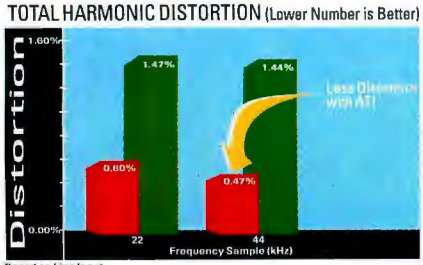

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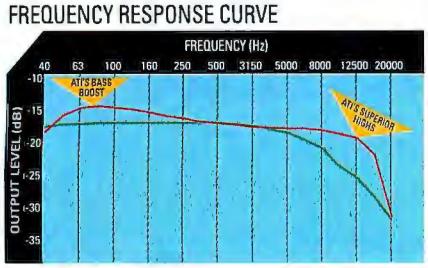

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AdLib

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Feature	ATI	SB PRO
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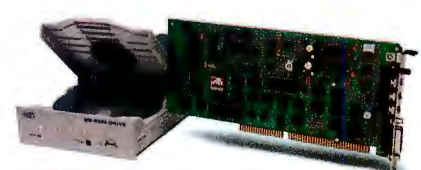

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Circle 90 on Reader Service Card

Ask the Captain

By Tay Vaughan

Q: We are starting our first serious cross-platform multimedia project using Macromedia's Director and Windows Player. We have two Mac IIci's, a Mac Quadra 700 and one 486/33 PC, and we need to transfer movie and sound files as large as 15 MB, mainly from the Macs to the PC. How can we move these files, short of installing an expensive server-based network?
—Steve Wickler, Wellesley, Massachusetts

A: There are many methods for swapping files between Macs and PCs, including passing files on diskettes or linking serial ports. But what you need for serious multimedia development (transferring 15 MB files qualifies as serious) requires that you grin and bear it and invest in the necessary network plumbing.

Your scenario is all too familiar: develop on the Mac, shuttle converted .MMM files to the PC, test them, send them back to the Mac for correction, convert and transfer them to the PC again, revise again on the Mac, ad nauseum...This cycle demands fast throughput. While your Macs (running System 7) are already equipped to provide LocalTalk network services, LocalTalk is too slow for multimedia (230.4 kbps). Watching a progress dialog worm its way across your monitor, pixel by pixel, is like inflating tractor tires with a bicycle pump.

Instead, go with Ethernet. At 10 MBps, it's more than 40 times faster than LocalTalk. The Quadra has Ethernet built in; the CIs and PC will need add-on Ethernet boards (about $200 each). You'll need to connect your computers with Ethernet wiring, probably low-cost twisted pair known as 10baseT. I installed Asante (800-662-9686) Ethernet cards in my Mac and PC in half an hour, and I used a separate hub adapter for the 10baseT wiring to avoid making up coaxial cables with BNC fittings.

You must also buy software to control the data flow. If you don't need a dedicated server, look for a peer-to-peer network operating system (NOS) such as Farallon's (510-814-5000) powerful new version of Timbuktu. This cross-platform NOS can be installed for about $160 per computer. Timbuktu also lets you access and control Macintoshes and Windows PCs remotely from anywhere on the network (it may startle you to see your Macintosh desktop on your PC monitor). SunSelect (800-445-TOPS) also offers a peer-to-peer NOS called TOPS at $299 per three-pack. It works on Macs, PCs and Sun workstations.

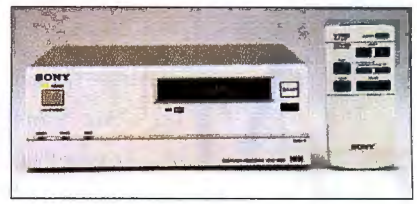
Q: What is CD-I-Ready?
—Marilyn DuPuis, Syracuse, New York

A: The CD-I-Ready disc is an audio CD with special information stored in the pre-gap just before the start of Track 1. These discs are specifically designed to work with Philips CD-I players, and allow pictures and text to be loaded into the player's memory before beginning to play the audio tracks, so users can view pictures MTV-style while stereo music is playing.

Q: Are there any affordable products available for my 486/33 PC that will let me overlay text and special effects onto the input from my laserdisc player, VHS or video recorder and then record that edited output to VHS without any serious degradation to picture and sound quality? I want to produce videotapes that combine computer graphics with real-time video.
—Eric Stover, Tempe, Arizona

A: You'll probably want to go with Hi8 cameras and decks and look into Sony's Video System Control Architecture (VISCA). This platform-independent command language lets you control up to seven video peripherals through a V-Box (about $250) connected to the serial port of your PC. For editing, check out Sony's V-deck, a computer-controllable Hi8 VCR (about $1,800). On the PC, you will also need to install a video digitizing board like Cardinal's SnapPlus (about $850) that provides video-out.

For software video editing tools on the PC, look into Mathematica's Media Author ($799), a DOS-based authoring package that supports VISCA. Also for the PC is Fast Electronics' Video Machine (about $4,000), which includes a digitizing board and authoring software. Mathematica can be reached at (800) 852-6284. Fast is at (508) 655-FAST.



Sony's Hi8 computer controllable VCR.

Q: At the high school where I work as an audio-visual technician we want to control an NEC PC-VCR using an Amiga-based interactive system. Is a driver for the Amiga available? We have been unable to find one.
—Peter Jacobs, Winnetka, Illinois

A: Yes. Call Dave Mileusnich at NEC, (708) 860-9500. Tempus fugit: The PC-VCR system has been discontinued. **M**

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Image Workshop: Painless Animation with Morphing

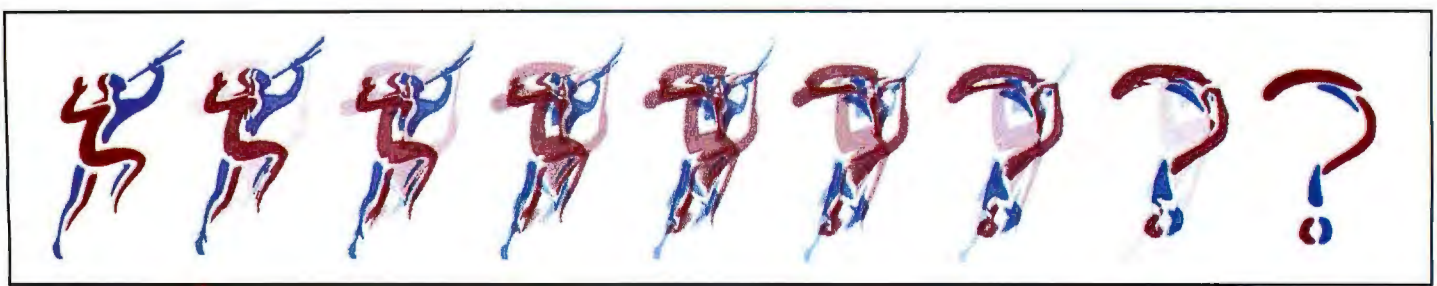
By Jeff Burger

Morphing—the seamless transition from one shape to another over time—has become one of the hottest special effects around. While the morphing tools used in *Terminator 2* and Michael Jackson's "Black and White" video cost more than an average graphic artist's yearly salary, less expensive packages are bringing similar power to the desktop.

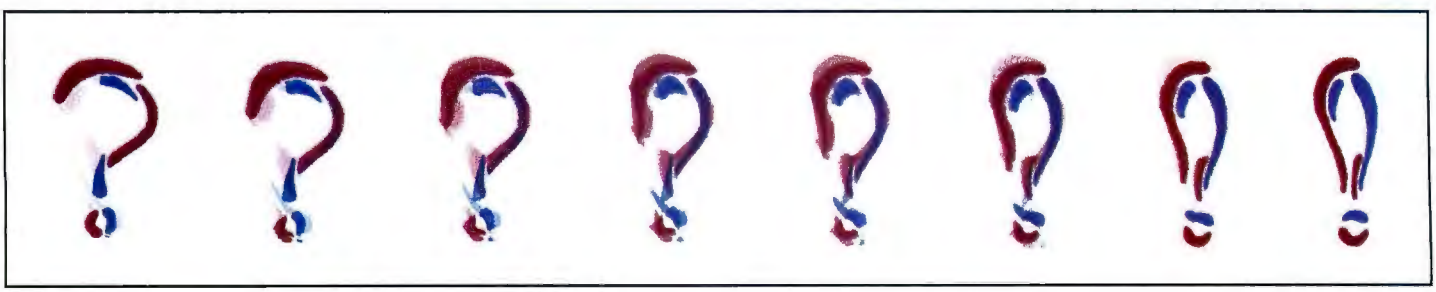
Morphing basically entails choosing start and end images, specifying a series of correlating points between the two images, and letting the computer render a specified number of interim frames. The quality of the morphed results primarily depends on how many points are specified, how many frames are tweened and how similar the images are.

As this example shows, morphing individual objects, rather than treating the entire image as a single object, brings more sophisticated results. I used this technique with Gryphon Software's Morph in creating the opening sequence of a trade show production for BT North America. The technique transformed the logo into a series of images that reinforced the emphasized words in the matching script: "We wouldn't be surprised if some of you *aren't sure* what BT does. In actuality, BT is one of the *largest* telecommunications companies in the *world*..." M

Jeff Burger owns Creative Technologies, a multimedia production and consulting firm, and is the author of The Desktop Multimedia Bible *(Addison-Wesley).*



2) The rendered images were output as a series of PICT files. The resulting images from all of the morph sequences were imported into MacroMind Director as cast members and placed in sequential frames against white backgrounds. This yielded one long segment in which the focal object transformed from shape to shape. A pause was invoked at each frame that contained a completed image in order to time them to hit at the appropriate points in the script. The following images depict the frames of two of the transformations.



1) The client's logo served as a starting and ending point for the sequence. A similar hand-drawn style was used to sketch interim images that emphasized the key words in the script. The sketches were digitized using a flatbed scanner and colorized to match the logo. (Eight-bit color was used to keep file sizes manageable for animation.) Each sketch had the same number of segments, in effect providing six morphable objects. A separate morph was done between each image by correlating points for each of the six objects (shown here as alphabetic letters). In some cases, the location of the points were changed on the key image to better accommodate their relationship as a starting or ending image. By providing separate morphs for each object, there was a greater sense of animated movement than if a single object simply melted into another.

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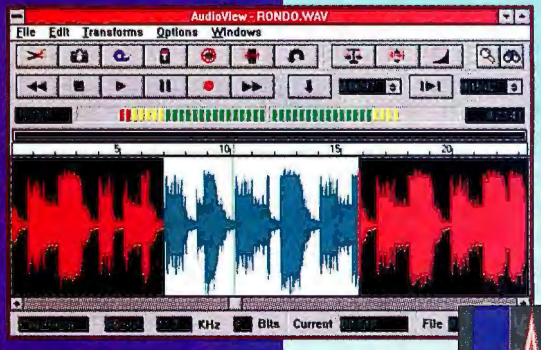

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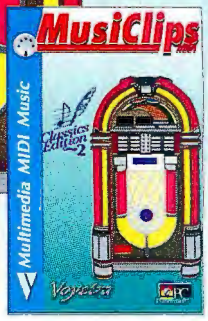

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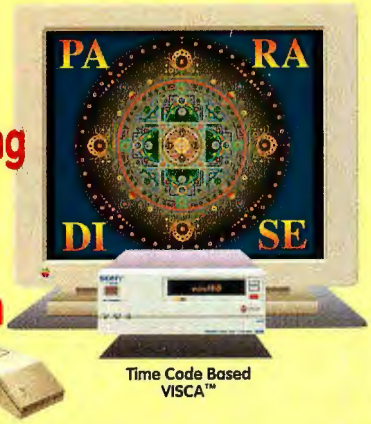

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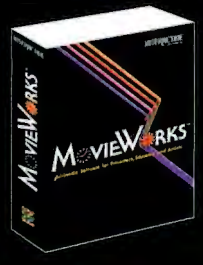

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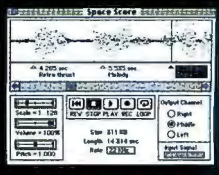

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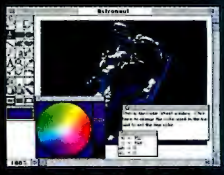
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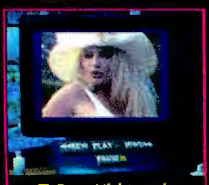

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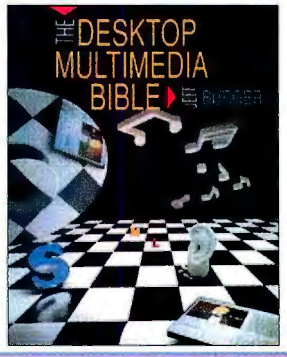

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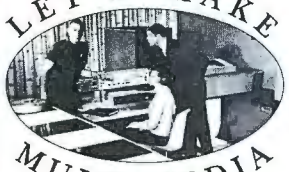

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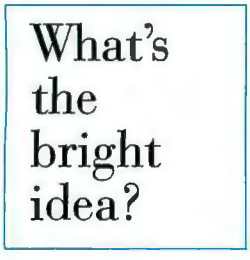
Years of writing on paper has trained us to think of images as black lines on white paper. Computer screens imitate the appearance of paper with screens that are mostly white. Such images are extremely bright, especially when the image is illuminated. That's why titles for illuminated screens like slides, movies and multimedia productions often favor light letters on dark backgrounds. (Light backgrounds are still best for large amounts of text.)

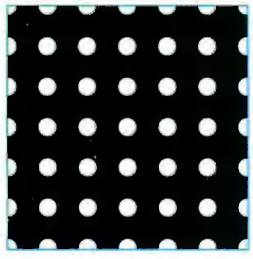
Brightness is especially important to consider when you cut from one image to another. Typically, the overall brightness of a movie stays about the same within a scene, even when the camera cuts from one angle to another. Big changes in brightness tend to occur at scene changes. Similarly, major brightness changes in a multimedia production are best used at major transitions.

Can you rank the images below from lightest (greatest percentage of lit pixels) to darkest? Write your answers in the blanks at right below.

Five puzzlers will be selected to receive *NewMedia* T-shirts. All entries must be received by April 12, 1993. Send your answers to *NewMedia*, 901 Mariner's Island Blvd., Suite 365, San Mateo, CA 94404, Attn: Puzzle Editor; or fax them to us at (415) 573-5131. Drop us a line while you're at it, including ideas for future puzzles. **M**



A

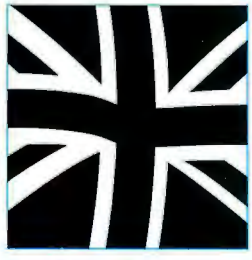


B

C

D

E

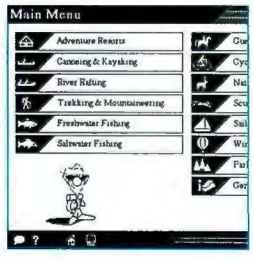


F

G

H

I



J

K

L

1. A
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

February Puzzle Winners

"A Matter of Interpretation" lived up to its name—although most sent in our intended answers many people translated those icons into answers that made equal sense. The five winners are Randall Gafner, Washington, D.C.; Peg Losee, White Plains, New York; Heather Monsen, Portland, Maine; Kelly Norris, Cary, North Carolina; Judy Zatz, New York.

February Puzzle Answers

1) a; 2) g; 3) i; 4) o; 5) b; 6) k; 7) l; 8) e; 9) n; 10) h; 11) d; 12) m; 13) p; 14) j; 15) f; 16) c

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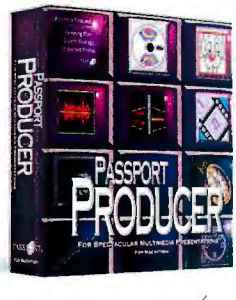

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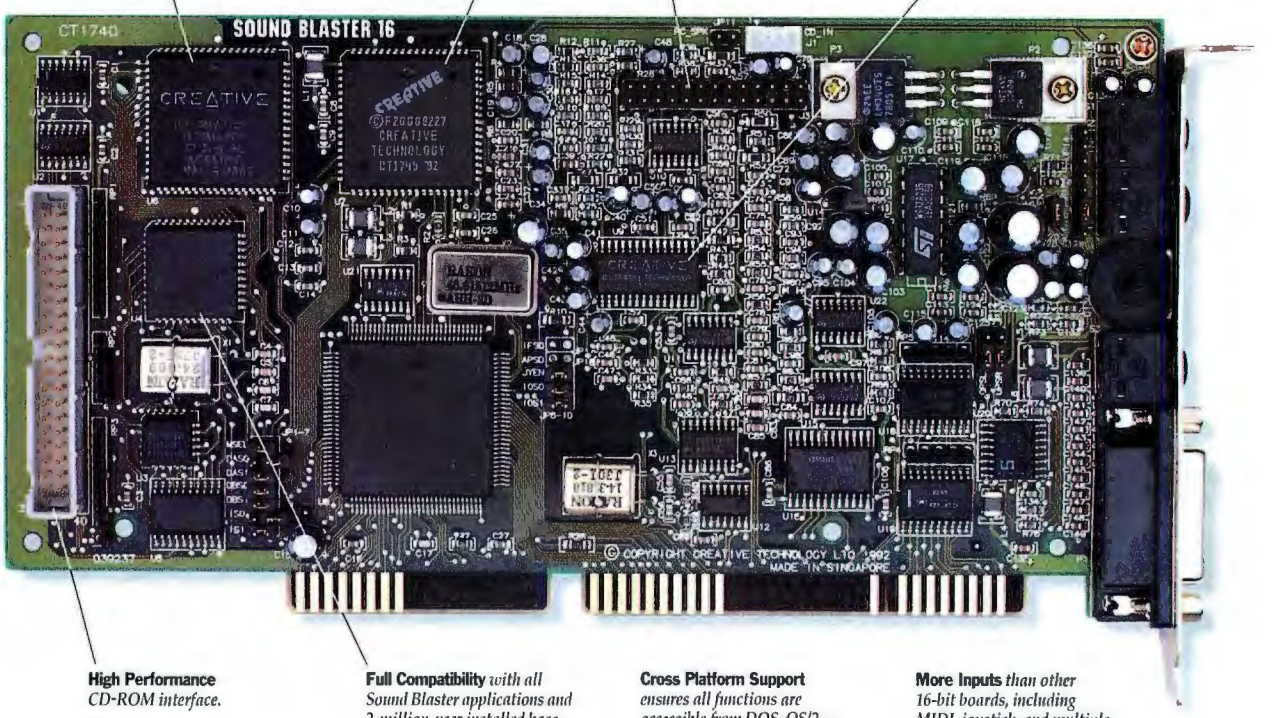

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